

The Mining Journal

RAILWAY AND COMMERCIAL GAZETTE

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

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No. 2149.—Vol. XLVI.

LONDON, SATURDAY, OCTOBER 28, 1876.

WITH SUPPLEMENT. PRICE SIXPENCE PER ANNUM, BY POST, £1 4s.

MR. JAMES H. CROFTS, STOCK AND SHARE BROKER,
No. 1, FINCH LANE, CORNHILL, LONDON, E.C.
ESTABLISHED 1842.

BUSINESS transacted in all descriptions of MINING Stocks and Shares (British and Foreign), Consols, Bonds (Foreign and Colonial), Railways, Miscellaneous Insurance, Assurance, Telegraph, Shipping, Canal, Gas, Water, and Dock Shares.

BUSINESS negotiated in Stocks and Shares not having a general market value. BUSINESS in COLLIERIES and IRON SHARES, and in the principal WAGON and MANUFACTURING COMPANIES of the NORTH of ENGLAND and SCOTLAND. BUSINESS in all the principal COTTON SPINNING SHARES.

Mr. J. H. CROFTS, having now established CORRESPONDING AGENCIES in all the Chief Towns of the United Kingdom, is prepared to deal in the various LOCAL Stocks and Shares at close market prices.

Accounts opened for the Fortnightly Settlement. Monthly and Daily Price Lists issued. Bankers: City Bank, London; South Cornwall Bank, St. Austell.

SPECIAL DEALINGS in the following, or part—
15 Flagstaff, 22s. 6d. 20 Pennerley, £1 1/2.
10 Allam, 15s. 10 Gt. West Van, 10s. 10 Pateley Bridge, £3.
10 Aberdunant, 15s. 10 Great Laxey, 10 Richmond, £9 13s. 9d.
10 Asheton, 15s. 9d. 10 Glyn, £2 12s. 6d. 5 Roman Grav., £14.
20 Bampfyde, 20s. 10 I.X.L., £1. 20 Rookhope, 17s. 6d.
20 Belstone, £2. 50 Javali, 12s. 6d. 20 Sweetland Creek, 6s. 3d.
20 Bilton, £7 1/2. 12 Llancarwell, £10 5s. 12 Tankerville, £10 5s.
20 Cathedral, 23s. 9d. 10 Lawes Chemical, £7 1/2 25 Van Consoles, £2 1/2.
20 Cedar Creek, 11s. 15 Marke Valley, 30s. 25 W. Tankerville, £1 14s.
20 Chapel House, £3 1/2. 10 Newport Abercrombie, 15 West Craven Moor.
20 East Van, £3 1/2. 30 North Laxey, 14s. 50 West Chiverton, 15s.
20 Emma, 12s. 6d. 20 Pestarena, 4s. 6d. 50 Wheel Grenville, 15s.
20 Eberhardt, 100 Parys Mount, 13s. 6d. 15 West Wye Valley.
20 Exchequer, £2 1/2. 30 Penstruthal, 11s.

* Shares sold for forward delivery (one, two, or three months) on deposit of 20 per cent.
SPECIAL BUSINESS in POSITIVE ASSURANCE SHARES.
Business on hand in all the principal TIN, COPPER, and LEAD SHARES.

AQUARIUM, HOTEL, and MISCELLANEOUS SHARES.—
SPECIAL BUSINESS.—FOR SALE, 10 Brighton Aquarium, £15; 5 Royal (Wentmore), £2 5s.; 20 Royal Insurance, £16 1/4; 10 Queen ditto; 10 Scottish ditto; 25 Britannia Fire, 12s. 6d.; 10 Leobong Tea; 5 Ceylon Company.
WANTED—15 Milford Docks Shares (fully paid); 50 Richards and Co.; 10 Pelly; 10 Chillingham Iron.
JAMES H. CROFTS, 1, FINCH LANE, LONDON.

COLLIERY SHARES.—SPECIAL BUSINESS in ALLTAMI, BILSON and CRUMP, CHAPEL HOUSE, CARMORE, CARDIFF and SWANSEA, NEWPORT ABERCROMBIE, NEW SHARLSTON, THORP'S GAWBER, WEST MOSTYAN (Ordinary and Preference), and Others.
JAMES H. CROFTS, 1, FINCH LANE, LONDON.

COTTON SPINNING SHARES.—These steady and remunerative Securities (comparatively little known on the London Market, but largely invested in the manufacturing districts) can be bought at the present time at unusually favourable prices to pay good dividends on the capital invested. The following Shares (Oldham Mills) are amongst the safest and best of their class:—
Name of Mill. Share. Paid up. per cent. per annum. quotations.
Central Spinning ... £ 5 ... £2 10 0 ... 32, 10, 30, 26 ... £ 3 1/2, £ 4
Greenacres ... 5 ... 4 0 0 ... 30, 20, 30, 20 ... 5 1/2, 6
Green Lane ... 50 ... Fully paid ... 30, 25, 30, 25 ... 7s, 8s
Royton ... 5 ... 2 0 0 ... 25, 35, 30, 20 ... 2 1/2, 3 1/2
Shaw ... 5 ... 2 10 0 ... 12 1/2, 20, 20 ... 2 1/2, 3 1/2
80 ... 5 ... 2 10 0 ... 17 1/2, 25, 20 ... 2 1/2, 3 1/2
Twiss ... 5 ... Fully paid ... 25, 5, 3, 26 ... 2 1/2, 3 1/2
Windor ... 5 ... 2 10 0 ... 30, 30, 27, 20 ... 3 1/2, 4 x d
* The accounts of all the above companies are made up and profits divided quarterly.

JAMES H. CROFTS, 1, FINCH LANE, LONDON.

FOREIGN BONDS.—ARGENTINE—EGYPTIAN—RUSSIAN, SPANISH, TURKISH. SPECIAL BUSINESS, and latest information.
JAMES H. CROFTS, 1, FINCH LANE, LONDON.

RAILWAYS.—SPECIAL BUSINESS. Fortnightly accounts opened on receipt of the usual cover.
JAMES H. CROFTS, 1, FINCH LANE, LONDON.

LEADHILLS (LANARKSHIRE).—SPECIAL BUSINESS in these Shares.
JAMES H. CROFTS, 1, FINCH LANE, LONDON.

MR. WILLIAM H. BUMPUS, STOCK AND SHARE BROKER,
44, THREADNEEDLE STREET, LONDON, E.C.
[Established 1867.]

SPECIAL BUSINESS, at close prices, in the SHARES of all the principal HOME and FOREIGN MINES.

Mr. Bumpus directs particular attention to MINING INVESTMENTS, and is in a position to give reliable information and advice respecting the same.

* The shares of several sound Dividend and Progressive Mines may now be obtained at prices which are very much in favour of purchasers, and investments made at the present time in this direction will, in all probability, yield very satisfactory results within a comparatively short period. A carefully selected List of Shares, likely to have an early rise in market value, may be had on application.

FOR SALE, at prices annexed—
30 Argentine, 130 Gold Run, 6s. 9d. 50 Parys Mount, 14s. 6d.
20 Blue Tent, 20 Glyn, £2 11s. 6d. 75 Penstruthal, 10s. 9d.
25 Condes of Chili, 50 I.X.L., 22s. 6d. 10 Richmond, £9 13s. 9d.
100 Cedar Creek, 9s. 6d. 35 Javali, 12s. 3d. 15 Tankerville, £10 5s. 9d.
20 Derwent, £4 1/2. 20 Leadhills, 10s. 9d. 25 Van Consoles, 45s.
45 Exchequer, £2 1s. 3d. 25 Llancarwell, £2 1/2. 20 W. Tankerville, 36s. 6d.
20 Frontino, £1 13s. 6d. 20 New Chiverton, £6 1/2. 5 A.H. Greasville.
60 Great W. Van, 10s. 3d. 2 Pennerley, 16s. 6d.

SPECIAL NOTICE.
THE THREE GREAT PRIZES FOR THE COMING YEAR:—
ARGENTINE COMPANY (LIMITED).
CONDES COMPANY OF CHILI (LIMITED).
BLUE TENT HYDRAULIC GOLD MINES (LIMITED).

Capitalists and investors will do well to secure an interest in these valuable properties without delay, as the shares are certain to have a great rise. All the above are thoroughly sound and legitimate, not ephemeral schemes, but substantial undertakings which have had large amounts of capital judiciously spent upon them, and are commencing to yield good returns; each being managed by a responsible and practical directorate, and efficient officers. Those, therefore, who invest in the shares at present prices may confidently expect to make a large profit on their outlay, and receive handsome dividends at an early date. The eminently satisfactory report from these properties prove them to be no speculations, and they undoubtedly afford an unusually favourable opportunity for the safe and profitable employment of capital. Full particulars of the mines, and every information concerning the several companies, may be obtained on application to Mr. Bumpus, who has special facilities for dealing in the shares.

WILLIAM HENRY BUMPUS, SWORN BROKER.
Business transacted in Stock Exchange Securities and Miscellaneous shares of every description. Fortnightly accounts opened. References given and required when necessary. A Stock and Share List forwarded free on application.
BANKERS—The NATIONAL PROVINCIAL BANK OF ENGLAND, E.C.

MESSRS. ENDEAN, FISHER, AND CO., STOCK AND SHARE DEALERS, 85, GRACECHURCH STREET, LONDON, E.C.

LLANRWST.
CAUTION.—TO GUARD SHAREHOLDERS.
The shares are £3 to £3 5s., intrinsically worth £10. Some unprincipled shareholders' brokers are adopting the following modus operandi:—In the first instance, shares are offered to a few of the shareholders by circular or letter (which they have not got under price, with a view to frighten shareholders out of their shares, and then, though a clerk, they offer the shares to a few of the other shareholders at the full price, and they make a good profit by the transaction.

The mine is looking splendid throughout, bordering up in high percentage dividends, which will be lasting. It will doubtless be the great prize in the coming year.
ENDEAN AND CO.,
85, Gracechurch street, London, E.C., 24th October, 1876.

DIVIDEND LEAD MINE INVESTMENTS.—
EVERY information respecting HOME and FOREIGN LEAD MINES and SHARES may be obtained of—
MESSRS. PETER WATSON AND CO.,
STOCK AND SHARE DEALERS,
54, OLD BROAD STREET, LONDON, E.C.

BRITISH AND FOREIGN (MONTHLY) MINING NEWS.
STOCK AND SHARE INVESTMENT NOTES—MINES, MINERALS, and METAL MARKETS—SHARE LIST.
No. 778, Vol. XV., for October, 1876.
Annual subscription, 6s.; single copy, 6d.
Will be ready on 2nd November to be forwarded to our subscribers.

MESSRS. PETER WATSON AND CO.,
STOCK AND SHARE DEALERS,
54, OLD BROAD STREET, LONDON, E.C.
(Over the Bank of South Australia).
BANKERS—THE ALLIANCE BANK (LIMITED).

MR. ALFRED E. COOKE,
STOCK AND SHARE DEALER,
76, OLD BROAD STREET, LONDON, E.C.
(Established 1853.)

Transacts every description of Business in ENGLISH FUNDS, RAILWAY STOCKS, and MISCELLANEOUS SHARES.
SPECIAL ATTENTION GIVEN TO MINING ENTERPRISE.
TRADING COMPANIES' SHARES (including COTTON SPINNING) dealt in at close prices.
COLLIERY SHARES dealt in on best terms.
SHARES in NEGLECTED and DEPRESSED SECURITIES dealt in.
Every description of STOCKS and SHARES, either for INVESTMENT or SPECULATION, BOUGHT and SOLD at net prices.

MINES—LLANRWST and ABERDAUNANT SHARES.
SPECIAL BUSINESS AT LOWEST PRICES.

MINES—LEADHILL SHARES. SPECIAL BUSINESS and EXCLUSIVE INFORMATION.

COPPER MINES—CATHEDRAL MINE, in the rich Gwynnapp District. Full particulars, and SPECIAL BUSINESS.

RAILWAYS, FOREIGN STOCKS, &c.—HOW TO ACT.
Speculative accounts opened on receipt of usual cover.

INVESTMENTS—SAFE AND REMUNERATIVE.
Advice and information (based on experience) given.
ALFRED E. COOKE, 76, OLD BROAD STREET, LONDON.

THE FOLLOWING SHARES (OR PART) FOR SALE AT NET PRICES:—
25 Aberdunant, 13s. 6d. 10 East Van, £3 1/2. 10 Pennant.
10 Argentine Gold, £3 1/2. 10 Flastaff, 22s. 6d. 40 Rookhope, 17s. 9d.
40 Bampfyde. 50 Great West Van, 10s. 3 50 St. Patrick.
50 Belstone, £2 1/2. 5 Great Laxey. 15 Sweetland Creek, 6s.
20 Blue Tent. 5 Glyn, £2 1/2. 10 Santa Barbara, £2 1/2.
35 Cakemore Colliery. 10 Grogwinion, £5 1/2. cum div.
20 Cathedral, new shares, 30s. 5 Javali. 5 Tankerville.
20 Leadhills. 20 Llancarwell. 5 West Goginan.
50 Cathedral, old shares. 5 Llanidloes. 5 West Wye Valley.
20 Cedar Creek, 9s. 9d. 2 Leadhills. 20 W. Grenville, 17s. 6d.
5 Pateley Bridge, £3.

* By an error these were quoted last week 32s. 6d., which price belonged to Cathedral, new shares.

Where QUOTATIONS are NOT INSERTED, the LOWEST PRICE of the day WILL BE TAKEN.

SOME of the ABOVE may be PURCHASED for SETTLEMENT END of DECEMBER on PAYMENT of 20 per cent. on deposit.

ALFRED E. COOKE, 76, OLD BROAD STREET, LONDON.

FOR FULL and EXCLUSIVE INFORMATION as to LEADHILLS MINE, LLANRWST, ABERDAUNANT, or ANY OTHER MINING or COLLIERY PROPERTIES—RAILWAYS, FOREIGN STOCKS—read the "Special Investment Circular" for NOVEMBER (ready on Thursday next). Price One Shilling; gratis to clients and correspondents.

Edited and published by—
MR. ALFRED E. COOKE,
76, OLD BROAD STREET, LONDON, E.C.
(Established 1853.)

MR. JAMES STOCKER, STOCK AND SHARE BROKER,
2, CROWN COURT, THREADNEEDLE STREET, LONDON, E.C.
[Established 1843.]

BUSINESS transacted in all kinds of STOCK EXCHANGE SECURITIES, also in every description of BRITISH and FOREIGN MINING SHARES.

SPECIAL BUSINESS in the following:—
BRITISH MINES.
Leadhills, £7 3s. 9d. Glyn, 5s. Rookhope, 17s. 6d.
East Van, £3 1/2. Van Consoles, 42s. Penstruthal, 11s. 6d.
Pennerley, 28s. 9d. Glenroy, £3 1/2. North Laxey, 14s. 6d.
Great Laxey, £19 1/2. Llancarwell. Parys Mountain, 13s. 6d.
Pateley Bridge, £3 1s. 60 Javali. Ladywell, 32s.
Great Dyllife, £4 1/2. Marke Valley, 28s. 9d. Clementina, 35s.
Tankerville, £10 1/2. W. Craven Moor, £12 1/2. Wheel Grenville, 14s.
Roman Gravels, £13 1/2. West Chiverton, £18 1/2. West Tankerville, 11 1/2.

FOREIGN MINES.
Exchequer, 41s. 6d. Frontino, 25s. 9d.
Flagstaff, 20s. Emma, 12s. 3d.
Argentine, £6. I.X.L., 21s.
Port Phillip, 8s. 6d. Malabar, 10s. 6d.
Chontales, 8s. 9d. South Aurora, 6s. 6d.
Don Pedro, 3s. 6d. Cedar Creek, 10s.
Sweetland Creek, 5s. 3d. Santa Barbara, 45s. 9d.

COLLIERIES.
Bilson and Crump, £7 1/2. Cardiff and Swansea, 48s. 9d. Chapel House, £3 1/2.

JAMES STOCKER, SWORN BROKER.
Consols, Foreign Bonds, Railways, Bank, Telegraph, Gas, and all miscellaneous Shares bought and sold, and fortnightly accounts opened for same. Shares sold for forward delivery on receipt of cover. List of prices and every information for ward on application. References given and required when necessary.

BANKERS: LONDON AND WESTMINSTER.

JOSEPH JOHN PYNE,
MINING BROKER,
AND
STOCK AND SHARE DEALER,
6, BISHOPSGATE STREET LONDON, E.C.

Mr. PYNE having been connected with MINING ENTERPRISE for upwards of FOURTEEN YEARS, and having been a DIRECTOR of MINES in SHROPSHIRE, MONTGOMERYSHIRE, CARDIGANSHIRE, CARNARVONSHIRE, YORKSHIRE, and in VENEZUELA, has had great opportunities of becoming acquainted with this particular branch of industry, and will always be desirous of giving every information in his power to investors transacting business with him.

ALL DESCRIPTIONS OF SHARES are dealt in, including BRITISH and FOREIGN STOCKS, and RAILWAY SECURITIES.
BANKERS—THE ALLIANCE BANK (LIMITED).

MESSRS. J. TAYLOR AND CO., 86, LONDON WALL, LONDON, E.C.

MINING ENGINEERS and INSPECTORS, STOCK AND SHAREDEALERS.
Have business in the following at close rates:—Cathedral, Devon Great Consols, East Van, Glyn, Great Laxey, Great West Van, Grogwinion, Llancarwell, Marke Valley, Minera, North Prince Patrick, North Laxey, Pennerley, Penstruthal, Roman Gravels, Rookhope, South Condurrow, Tankerville, Van, Van Consoles, West Pateley Bridge, West Tankerville, Wye Valley.

MR. CHARLES THOMAS
MINING AGENT, STOCK AND SHARE DEALER,
3, GREAT ST. HELEN'S, LONDON, E.C.

MESSRS. A. W. THOMAS AND CO.,
10, COLEMAN STREET, E.C.
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"INVESTMENTS AND SPECULATIONS FOR 1876."
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TO INVESTORS AND SHAREHOLDERS.
GOULD SHARP AND CO
STOCK AND SHARE BROKERS, 42, POULTRY, LONDON, E.C.

Have the following SHARES for SALE in the undermentioned mines:—
OFFERS CAN BE MADE, OR PRICES WILL BE FORWARDED.

40 ABERDAUNANT ... (offer) LEAD. 100 PARYS MOUNTAIN ... COPPER.
50 ASHETON ... do 200 PENSTRUTHAL ... TIN.
200 BODIDRIS ... do 85 PATELEY BRIDGE ... LEAD.
200 CENTRAL VAN ... do 100 PENNERLEY ... do
100 EAST CHIVERTON ... do 2 ... PRINCE OF WALES ... COPPER.
140 ELGAR ... do 100 ROOKHOPE ... LEAD.
60 GLENROY ... do 165 SAINT PATRICK ... do
100 GLYN ... do 100 TALXBONT ... do
175 GREAT DYLLIFE ... do 12 VAN ... (offer) do
200 GREAT WEST VAN ... do 100 VAN CONSOLES ... do
50 GROGWINION ... do 80 WEST GREAT WORK ... TIN.
90 LEADHILLS ... do 50 WEST TANKERVILLE ... LEAD.
50 LLANRWST ... do 100 WEST WYE VALLEY ... do
200 MEDLYN MOOR ... TIN. 50 WHEEL CREBOR ... COPPER.
50 MONYDD GORDDU ... LEAD. 50 WYE VALLEY ... LEAD.
200 NORTH LAXEY ... do 100 WEST GOGINAN ... do
N.B.—Some of the above will be sold under present market quotations.
Established 1852. [Bankers: London and Westminster, Lothbury, E.C.]

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CAPITALISTS, SHAREHOLDERS, INVESTORS, TRUSTEES will find this Investment Circular a valuable, trustworthy, and Safe Guide.
GOULD SHARP & CO., SHAREBROKERS, 42, POULTRY, LONDON, E.C.
Established 1852. [Bankers: London and Westminster, Lothbury, E.C.]

TO SHAREHOLDERS.
WEST CHIVERTON and WEST CRAVEN MOOR.—
WANTED TO PURCHASE, TWO HUNDRED or THREE HUNDRED SHARES, in small or large lots, in the above MINES, for cash.

Sellers will please state number and lowest price to—
GOULD SHARP & CO., SHAREBROKERS, 42, POULTRY, LONDON, E.C.
Established 1852. [Bankers: London and Westminster, Lothbury, London.]

GROGWINION LEAD MINE (LIMITED).
MESSRS. H. HALFORD AND CO., STOCK AND SHARE BROKERS, OF EXCHANGE CHAMBERS, CHANGE ALLEY, LOMBARD STREET, LONDON.

Strongly recommend the ABOVE MINE as one of the BEST and SAFEST MINING INVESTMENTS. The dividends are declared half-yearly—the one for the last half year was 12 1/2 per cent.; the next one will probably be 20 per cent. The "reserves" are valued at £200,000. Every information upon application to the above.
Daily Closing Price Lists of Mines and all other Securities sent post free on application.

Messrs. H. H. and Co. are BUYERS of Shares in GROGWINION MINE, and also of Shares in WYE VALLEY LEAD MINE; and they will be GLAD TO HEAR from BROKERS or DEALERS who have ANY FOR SALE.

NOTICE.
BROKERS OR DEALERS HAVING SHARES FOR SALE
in either GROGWINION or WYE VALLEY MINES can FIND IMMEDIATE PURCHASERS, on application to—
H. HALFORD AND CO.,
STOCK AND SHARE BROKERS,
EXCHANGE CHAMBERS,
CHANGE ALLEY, LOMBARD STREET.

MR. EDWARD ASHMEAD,
LONDON MINING AGENT, ACCOUNTANT, AND AUDITOR,
CORNHILL CHAMBERS, 62 AND 63, CORNHILL, LONDON, E.C.

Twenty years' uninterrupted experience (from 1856). Information on Mining and Mining Companies will be given personally or by letter.

FERDINAND R. KIRK, STOCKBROKER
5, BIRCHIN LANE, E.C.

SPECIAL ATTENTION directed to FOREIGN BONDS and RAILWAYS. Some unusual opportunities are now offering for sale or purchase. Fortnightly accounts opened on the usual terms.

Bankers, London and Westminster, Lothbury.

Wherever a difficulty arises as to the price of any security, whether quoted or not, application should be made as above, when full particulars will be forwarded by return of post.

WILLIAM B. COBB,
62, CORNHILL, LONDON, E.C.
BANKERS: The Alliance Bank

Business transacted in every description of British and Foreign Stocks, Mining shares, &c.
Fortnightly accounts opened in rails, foreign stocks, and mining shares.

VICTORIA (LONDON) MINING COMPANY (LIMITED).—£1 shares specially recommended, paying dividends at the rate of 10 per cent. per annum on present price.

MESSRS. A. ENDEAN, FISHER, AND CO., STOCK AND SHARE DEALERS, 3, LOMBARD COURT, LOMBARD STREET, E.C.
Bankers: London and Westminster, Lothbury.

LLANRWST MINE.—It is unnecessary for Brokers and Dealers to advertise these shares for sale at ridiculous prices, except for the means of decoy, as they are readily bought by—
ENDEAN, FISHER, AND CO., of 3, LOMBARD COURT, E.C.

ABERDAUNANT LEAD MINE.—
ENDEAN, FISHER, AND CO., of 3, LOMBARD COURT, E.C., are BUYERS of ONE THOUSAND SHARES. *Bona fide* sellers need not advertise. The public would do well to be cautious of parties offering them at low prices.

BODIDRIS LEAD MINING COMPANY (LIMITED).
Capital £20,000, in £1 shares.
Messrs. ENDEAN, FISHER, AND CO., call particular attention to the prospectus of this company now issued; they are confident it is one of the best, and most substantial undertakings placed before the public.

The present prospects, and the discoveries made, are guarantees of its future prosperity. Those who wish to invest in one of the prizes of the day should communicate with us at once. Prospectus and map forwarded on application.

ENDEAN, FISHER, AND CO., 3, LOMBARD COURT, LONDON, E.C.
Bankers: London and Westminster, Lothbury.

CHICAGO SILVER MINE.—
Capital issued, £12,000; net profits for the past year, £27,035 4s. 6d.; next dividend due in November. See report of annual meeting in this number of the Mining Journal.

SPECIAL BUSINESS done in Chicago, by—
HENRY CAMERON & CO., 36, NEW BROAD STREET, LONDON, E.C.

STOCK.—HAYWARD TYLER AND CO., of LONDON, have now ready ENGINES, BOILERS, and "UNIVERSAL" STEAM PUMPS having made extensive alterations in their premises to enable them to keep a stock.

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Author of "Railway Machinery," "Railway Locomotives," &c.

CROSBY LOCKWOOD and Co., 7, Stationers' Hall-court, London, E.C.

Royal School of Mines.

PROF. SMYTH'S LECTURES ON MINING—No. LI.

[BY OUR SPECIAL REPORTER.]

When carbonic acid gas occurs in a mine various methods have been proposed and adopted for getting rid of it. For example, if it has accumulated in a sump a bundle of straw has been tied to the end of a rope, and moved up and down in the sump, so as by mechanical means to dilute the gas and gradually replace it with air. In other cases it has been proposed to use caustic lime to absorb the gas, and in a limited area this might serve a good purpose. But when the gas is distributed over a large area it can only be overcome by introducing a sufficiency of air to dilute it and carry it off. In some of the volcanic districts of South France the gas was driven out of places otherwise inaccessible by injecting high pressure steam into those places. The formation of this gas by an explosion of fire-damp is very commonly fatal to any of the men who may survive the explosion itself. With reference to the production of fire-damp, some interesting light has lately been thrown on the subject by Mr. Galloway, who has pointed out the very serious and important part which the coal dust plays: a slight explosion may raise such quantities of this as to choke the men, and Mr. Galloway believes that the dust also assists in forming a very explosive mixture in the mines. Fire-damp accompanies certain coals and certain districts in very much larger quantities than others, and in many cases it appears to be entirely absent. In the Forest of Dean coal field the lecturer did not know of a single accident arising from the presence of this gas, and no precautions were taken against it. In Wales and Yorkshire there is a great diversity in the seams, the same seam in some parts being quite free, and in others accompanied with very large quantities of fire-damp, and then any unfortunate want of care, want of discipline, or want of thought may lead to very serious accidents. In Scotland fire-damp is, as a rule, unknown. And in the continental coal fields the same variation is found to occur in different districts. In all the districts it will be observable that there are certain seams, and certain areas of seams, where the fire-damp appears to be disseminated and given off in such a way that proper attention to ventilation may fairly guard against any injurious effect; but then there are other seams and other areas where you are liable to sudden eruptions of the gas, and where, therefore, you cannot trust to the ventilation, but must be prepared to meet it by having the men always provided with covered lamps, and by suitable discipline which should direct the men what to do when they meet with it.

Remarkable cases have occurred, and are on record, where these eruptions have come out in great force, so as to fill the whole of the workings, and yet, owing to admirable discipline and precautions, which have to be taken regarding a current of air in the case of all the lamps which are in use have already been mentioned: cases have been cited where Davy lamps have succumbed to an outburst of the gas. In one case an explosion could be traced to a lamp that contained only 529 apertures to the square inch, instead of 724, the number insisted on by Davy. Prof. Bishoff speaks of a case where an olefant gas was present mixed with fire damp, and states that such a mixture takes effect through a smaller mesh, but such a case has not been found in our collieries. The lamps should be looked to, to see that they are not in bad order, or of bad material, or in the case of a clanny not cracked, &c. It is a common notion among colliers that a small head of water is sufficient to stop the gas, but that is not the case, the gas will sometimes, for instance, make its way through the water in the sump, and accumulate there under the platform, till some unlucky accident brings it in contact with a naked light. If the issue occur in a limited space, this portion may be confined, and the gas led away in a pipe to a safe place, as at the Wallsend Colliery, where a long flame was thus kept burning for years. Small accumulations of this gas have been found in some of our metalliferous mines, but they are very unusual. Cases have occurred in one or two of the Cornish mines near Penzance, and in Flintshire. Another remarkable instance occurred in the neighbourhood of Llanidloes, Montgomeryshire, where the Van lead mine gave off considerable volumes of inflammable gas several times when the rock was freshly cut. In some of these cases there is very little doubt that the gas is given off by the rock, in others it may be due to the decomposition of organic matter, principally some of the timbers of the mine.

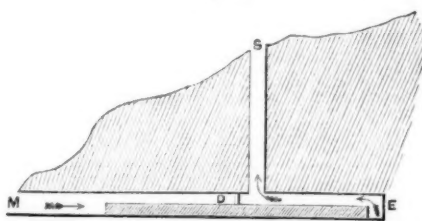
It is very important that every manager of a mine should be to a considerable extent a meteorologist, for there is no doubt that the ventilation generally, and even the evolutions of these gases, is affected by the circumstances of the atmosphere. Perhaps one of the first persons to point attention to this was Mr. George Stephenson, who remarked that when the barometer stood low some of the blowers, or fissures, were throwing out great quantities of gas, but when it stood high he found these same blowers would not only give off no gas, but in some cases even drew the outer air in. In the South of England Mr. Woodhouse has paid great attention to the same matter, and has given a deal of information in his evidence before various commissions. And so much is he impressed with the importance of this matter, that in certain critical collieries under his charge he has given strict orders that as soon as the barometer falls below a certain point all the men shall be withdrawn from those mines. And recently Mr. Scott, of the Meteorological Office, and Mr. Galloway have jointly presented several papers on this subject to the Royal Society, which deserve to be carefully studied by all connected with mine management. They have shown what indeed might reasonably have been inferred, that the periods at which explosions have occurred coincide in many instances with depressions of the barometer, and also with certain changes as regards the temperature. The pressure of a heavy column of air tends to force back the gases into the fissures and pores, whereas when the pressure is lightened they come out in greater force, and the increased danger must be met by increased ventilation. You will generally find that at the time the barometrical pressure is taken off, and the amount of danger increased, that with the increased temperature your ventilation, as far as it depends on natural causes, falls off, so that the energies of the people who have to manage the ventilation will be doubly taxed.

There is another point connected with the temperature of the workings which has been much disputed—the increase of temperature as you go downwards from the surface. The rocks increase in temperature, in some deep workings a piece of ore when struck off the lode being almost too hot to hold comfortably, and the air is likewise heated, causing great inconvenience to the men, and rendering them less able to do the amount of work they otherwise could. The water also is heated, and sometimes the water coming up from below is considerably warmer than the mine at that part, that which comes from above may be comparatively cool. The first persons to make systematic observations and experiments on this question were Mr. Henwood, in Cornwall, and M. Reich, in Saxony. Great variations occur in different districts and in different rocks, but it is more surprising that these differences should be confined within such narrow limits than that they should not be

rather more considerable. The general average result of Reich's observations was that the depth corresponding with an increase in temperature of 1° Fahr. was 76-26 ft. Mr. Henwood's experiments, and the lecturer's own experience, give the depth about 60 ft. The observations of Prof. J. Phillips at Monkwearmouth Colliery gave 59-36 ft. The very careful experiments made by Mr. Bryham during the sinking of the Rosebridge Collieries (the deepest in England), where holes were bored to a depth of 3 ft. into the rock at the sides, and thermometers placed in and tampered, and allowed to remain for a time, gave as a general result in the lower part of the workings 51 ft. for 1° Fahr. In the Grenelle bore-hole the observations, presided over by Arago and other careful observers, gave the depth at 60 ft. At the deep holes at Creuzot M. Malfredin found at one bore-hole 56 ft., and in another 43-1 ft.; the latter, however, he supposes to be vitiated by the heat due to the friction of the borer, and we must also in the bore-holes filled with water remember that any heat in the lower part will cause upward currents in the water, and tend to equalise the temperature of the various parts. In the deep Prussian bore-hole at a depth of 4040 ft. the temperature is given as 38-5° Reaumur, which would give for 1° Fahr. a depth of 67 ft. Abnormal conditions will occasionally alter these rates considerably. At a depth below the surface of 30 to 50 ft. the temperature of the ground will be found to be invariable, and just equal to the mean annual temperature of the locality; hence, going down on a cold day it appears to be warm, while on a hot day the air underground appears to be cool.

It is found that a great number of mines are sufficiently ventilated by natural, or "spontaneous," ventilation. For example, in driving a level to a distance usually of 50 to 80 fms., though occasionally as far as 150 fms., a natural ventilation will be set up, the air coming into the level along the floor, running as far as the end, then rising, and returning along the roof. Similarly in sinking a shaft, especially if there be a little water trickling down the sides, it will be found that the air comes from the surface down the sides of the shaft, and returns up the centre, and this natural ventilation is maintained to a greater or less depth. In both these cases the natural ventilation is greatly assisted by the placing of a diaphragm, or brattice, horizontally in the case of the level, and vertically in the case of the shaft, so that the currents of air moving in opposite directions are prevented from rubbing against each other. The same may be observed if there are two levels side by side, with occasional cross-cuts communicating between the two, these being successively stopped up as a new one more advanced is formed; and the same is true of pits. On the small scale this principle is carried out in the use of air-pipes, or air boxes; usually square wooden pipes, with joints fitting into one another, and placed on timbers at the top of a level, or supported at one of the corners of the level, or when they are employed on a larger scale—say, 2 feet square—they will be placed on the floor; but in these latter cases it becomes a question whether a second level ought not to be preferred and introduced. In consequence of the objections to these pipes being of wood—their liability to decay, and to dry-rot, and the fungoid growths inside in moist places obstructing the current, and frequently imparting a disagreeable odour—other materials have been proposed and used, such as zinc, wrought-iron, cast-iron, &c., but in most instances wood is still preferred. Papiermache has been suggested for the purpose, but although it might do here and there it would be totally unsuitable for most of our British mines. A natural ventilation is generally set up where you have two openings, and these at different levels, where, for instance in hilly ground, you have an adit level from the side of the hill communicating with a vertical shaft opening higher up the hill, during the greater part of the year at least a current of air will pass through. And this current may be made to ventilate the parts beyond the shaft opening (Fig. 35), by leaving air-boxes from the level between the

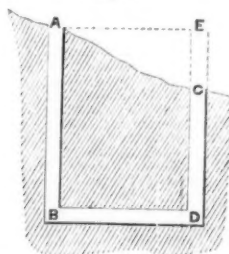
Fig. 35.



shaft (S), and the mouth (M) of the adit, and continuing them to the end (E), closing up all other communication between the shaft and the lower part of the level by means of a door (D). Then when the air is going in the direction from the adit to the shaft it will follow the direction of the arrows in the figure.

If on similarly irregular ground (Fig. 36) we have two shafts, A B,

Fig. 36.



C D, then leaving out of consideration, in both cases, the column of air above the level of the shaft, A B, we have in the first shaft the pressure of the column A B; in the second of the column E D. On a cold winter's day the column, E D, will be the heavier, and a current of air will set down the shaft, C D, and up A B. On a hot summer's day the reverse is the case, the air in A B will be colder than the column E D, because the portion E C is exposed to the sun, hence a current will now be established down A B and up C D. In the case of many collieries, however, the ground is flat, and the shafts are of the same level. The necessary difference of level is sometimes secured by building up a regular stack over one of the shafts. But it may be that with equal shafts water dropping down one may cool the air there, and thus a tolerable ventilating current be set up and maintained. But in these cases a change in the weather may cause a stagnation in the air, and then artificial ventilation must be supplied, or the men withdrawn till the weather is again favourable. Mr. Nichols Wood has shown that many thousand cubic feet of air can be driven through the mine per minute in some cases by this natural ventilation alone. Another method, which has been adopted in Flintshire occasionally, is that of putting up cowls, so arranged that the cowl at one shaft always opens to the wind, that at the other shaft being always closed to the wind, the cowls

being frequently simply constructed out of a barrel or square box. Many of these methods are exceedingly old, and were practised in mediæval times, as is seen by reference to Agricola's book.

BRISTOL MINING SCHOOL.

An interesting lecture on the Bristol Coal Field, by Mr. Handel Cosham, inaugurated the session of the Bristol Mining School, and affords a good earnest of what may be expected in the course of practical scientific lectures which the governors of the School have been enabled to arrange for. The President on Monday evening was Mr. W. P. Baker, the Chairman of the board of governors, and there was a very large audience, including the Mayor, the Revs. Dr. Caldicott and T. C. Price, Alderman Edwards, and Messrs. the Revs. Jose, Hare, Bennett, Fox, J. and E. Wethered, Widmark, Taylor, Joseph, Morgans, Leonard, and Coomber. The lecture was a decided success, and started the course capably, whilst the circumstance that all the coalowners and managers in the neighbourhood were present is an evidence of the interest taken in the School. In the course of the lecture (to which full reference will be made on a future opportunity) Mr. Cosham briefly mentioned his paper read before the Geological section of the British Association at the Bristol meeting, in which he described the 40 or 50 seams constituting the mineral wealth of the district, the matrix containing and the strata dividing them, as well as the form of the field and some of the faults which had disordered it, and its distinguishing geological features; and then referred to the great Welsh, the Forest of Dean, and the Bristol coal fields, which, though now separated by miles of intervening strata, once formed a single basin, which by subsequent upheavals and depressions has, since the original deposit of the coal, been severed as now found. This field, with about 1-17th of the coal of the country, embraced an area of 240 square miles, and over 150,000 acres, less than 50 square miles of which were exposed to view, and probably contained at least 6,000,000,000 tons of coal yet to work. The present output is little over 1,250,000 tons; and, since during the last 250 years they have raised but 120,000,000 tons, unless succeeding generations were more enterprising and energetic than we, the world would be 4000 or 5000 years older before the field would be exhausted.

The geological phenomena of the district were very minutely described by the lecturer, who expressed the hope that the students of the Bristol Mining School would help to develop the resources of the field, and to prevent waste, the School having already turned out some distinguished men who had laboured in those directions. The thoroughly practical character of the lecture was much appreciated by the audience, and at its conclusion the cordial vote of thanks, proposed by the President, and seconded by Mr. Bennett, was unanimously carried. In proposing it, the President remarked that they must remember that Mr. Cosham was really the founder of the School more than 20 years ago, and it was through his exertions that the School was sustained for some years. The School came under the management of the governors of the Colston Trust last year, and soon after they were in office Mr. Thomas Coomber's suggestion for the present course of lectures, in which he was supported by Mr. Cosham, was adopted. Mr. Coomber displaying the most creditable anxiety for pushing scientific education, and laying before them a plan which enabled them to re-open the Mining School on its old footing, though for some years it had been closed. Not only had Mr. Coomber's plan been adopted, but students had resorted to the school in quite as large numbers as they expected. The institution is now one of the most important mining schools in the country, and appears to have a long period of prosperity before it.

NATIONAL INSTITUTION OF MECHANICAL ENGINEERS.

The general quarterly meeting of members was held, on Wednesday, at the Memorial Hall, Manchester.—Mr. THOS. HAWKLEY presided; and there was a moderate attendance. The minutes of the last meeting having been read, the CHAIRMAN announced that at the anniversary meeting, to be held in Birmingham in January next, it would be proposed that the business of the Association should be removed to London.

BLAST-FURNACE TUYERES.

The SECRETARY (Mr. W. P. Marshall) read a paper on "Open Spray Tuyeres and other Blast Furnace Tuyeres," by Mr. E. H. LLOYD (Wolverhampton). This tuyere consisted of two concentric conical tubes, closed at the nozzle end, and the near end. The spray pipes were made either of wrought-iron, brass, or copper, and a sufficient amount of water was allowed to escape through small holes or slots in the spray pipes to protect every part of the tuyere casing which was exposed to the heat of the furnace. The spray or jet of water from each hole in the spray pipe spread over a considerable surface, and a small number of holes was, if they were properly used, sufficient to keep the whole interior surface of the tuyere casing constantly wet. In cases where the tuyeres on the oil system were durable, these were found to be equally so under the same conditions. The danger of accident from the stoppage of supply pipes, "drilling," or the wearing of a hole in the surface of the tuyere by the dropping of metal upon it, the fall upon them of solid material, or the rising up of the molten metal or the slag to the tuyere, was effectually prevented by the use of open spray tuyeres. Open spray tuyeres were now in use at about one-half of the furnaces in blast in South Staffordshire, and were being adopted in other districts.—The CHAIRMAN proposed a vote of thanks to the writer of the paper, which was passed.

The CHAIRMAN having proposed a vote of thanks to Mr. Lloyd for his paper, which was unanimously agreed to, a general discussion was opened.

Mr. COCHRANE (Dudley) said the Institution and ironmasters generally were very much indebted to Mr. Lloyd for having introduced to their notice a tuyere which would remove those sources of danger which were almost unavoidable in connection with the carrying out of blast-furnaces. There seemed to be a great misconception existing in the minds of the public and coroners' juries with respect to explosions in furnaces, which very erroneously they seemed to regard as all explosions of the blast-furnace. There were two causes of explosions—an escape of water, and the explosion of the tuyere itself. The old wrought-iron jacket tuyere was in common use in Staffordshire 20 years ago, and it was his first experience in blast-furnaces to have these in use. The author of the paper had not alluded to one source of considerable loss in the working of blast-furnaces, and that was the difficulty of making a perfect weld, so that no water should escape into the furnace, and they had had to take out one of their water jacket tuyeres, because of the failure in the weld. He had adopted a very simple mode of detecting a leakage, supposing the water did not show itself by running over the fore part of the furnace—by thrusting a cold iron bar into the furnace and immediately withdrawing it. After his experience in South Staffordshire, when the works commenced in Mid-Staffordshire, the coil was most frequently adopted, and it took the form of the continuous coil. In the coil tuyere he had never heard of an explosion of the tuyere, but they were liable to other accidents. He thought one improvement might be suggested in the tuyere which had been brought before them, and that was in not cooling the blast when it had been got up to the proper temperature. There was just another point to which he might allude. They had been troubled with a stoppage in the nozzle, but they had got over that difficulty by putting in the tank a copper gauze screen with the apertures just a little less than the holes delivering to the tuyere.

Mr. DANIEL ANDERSON (Hyde) said he had real pleasure in adding his testimony in favour of the spray tuyere; he thought it would protect ironmasters from many of the disastrous consequences with which some of the old tuyeres were liable. He had been a sufferer from an explosion of a coiled-pipe tuyere, and anyone who was acquainted with the disasters which arose when a quantity of water was projected into the furnace would agree with him that the tuyere which had been brought forward was a very desirable and excellent invention. Claster tuyeres were the worst of all, as they carried such a body of water. With regard to Mr. Lloyd's tuyere, he thought an improvement might be effected if one of the three pipes could be arranged to have a greater quantity of water discharged from it if necessary. He was quite of opinion that a number of the explosions which had taken place in connection with blast-furnaces during the last few years might be avoided if the spray tuyere were adopted, and he hoped it would be generally adopted before long for the sake of human life, as well as of property. With regard to leakage, he had noticed that they might be discovered by the increase in the quantity of gas at the top of the furnace, but difficulties no doubt would increase by a furnace being in trouble, and if they could get a tuyere which would enable them to keep a furnace in good working order it would be a great benefit.

Mr. WILSON (Crewe) asked whether Mr. Lloyd had applied these tuyeres to cupolas. He thought they would be found very serviceable, and if they had not been tried he would be glad to try one and report the results to the Association. Mr. COOPER observed that the spray tuyere recommended itself to his common sense. He quite appreciated the moderate pressure of water which the Lloyd applied to the edges. A very heavy pressure would break up the water and leave the side with very much less water upon it than with a moderate pressure. From a number of experiments he had found that a ½ in. jet, with a head of 1 ft., gave the best results, giving a surface of 16 in. wide and 3 ft. long covered with water, and he had also found that a spray properly applied had a power to give a cool surface, which would otherwise become red hot. There was, therefore, power in Mr. Lloyd's sprays to keep the tuyeres cool, and he had conferred a real boon upon ironmasters, and a still greater boon upon furnace-keepers.

Mr. J. HEAD (Middleborough), with reference to Mr. Webb's question, said that there were two or three cases in the Cleveland district in which cupolas were being worked very successfully by placing a water-bomb round that part through which the tuyeres went. The consumption of coke was a little more than in the ordinary cupola, but the general results were very satisfactory, and the cupolas were working for a whole week together.

After some further discussion, Mr. LLOYD briefly replied with regard to Mr.

In conclusion, it is a matter for congratulation that there has been achieved in the cause of scientific education so great a work as the establishment of a college in Yorkshire where that knowledge and scientific training which this country so much lacks, to avoid being left behind continental competition, may be systematically acquired, and of which our distinguished Chairman forms so important

directors, and accepted the recommended dividend at the rate of 8 per cent., and keeping a handsome balance in hand. The present eminently satisfactory position of the company is mainly owing to the able management at the mine of Mr. Godbe, a gentleman who enjoys a high local reputation, and has considerable influence in the territory where he has resided so long.

METALLURGICAL PROCESSES

Amongst recent metallurgical inventions reference may be made to that of Mr. W. H. NEVILL, of Llanelly, for improvements in the treatment of cinders from iron puddling, heating, and other furnaces, and which consists in applying a current of air or steam, or a combination of air and steam, or other gaseous substances, to the cinders whilst they are in a melted state. This may be done by passing the current through the cinders while they are in a melted state in a reverberatory or other furnace, or by tapping them out into a receptacle and then, by means of a pipe properly arranged, passing the current or currents of air, or steam, or gaseous matter through them until they become thickened. Whilst in this state the cinders may be turned out of the receptacle and at once divided into smaller masses, or may be allowed to set, and, when cooled, broken up to any required size. If required for repairing puddling furnaces they may be at once used for the purpose, but he prefers to burn them in an ordinary bulldog kiln or other convenient furnace, when they will be found to have a beneficial effect on the quality and yield of the malleable iron, or they may be sent to the blast furnace either burnt or unburnt for reduction. A similar result, not so complete, may be obtained by the mechanical agitation of the melted cinders and subsequent treatment described by Messrs. Goss and Co. for producing oxide and chloride of zinc from iron cinders.

Though the silver yield kept up distrust set in, and prices of stock commenced to fall in the summer of 1863, it being a notorious fact that many companies had been organised for the purpose of swindling the ignorant by selling worthless mines. Prices declined slowly until the middle of the next year, when a panic set in, sweeping away the "wild cat" or baseless speculations, which were never heard of more. Litigation, long and costly, supervened, arising mainly from the doubt whether the Comstock lode had at its side a number of branches, or whether it was one of a series of independent and parallel lodes within a distance of 200 yards. At the surface several seams of ore were perceptible, and the first claimants had taken the seam which was largest and lowest on the hill, and asserted that the seams above were mere branches. This, however, did not prevent others from claiming the upper seams, and thus arose the struggle that cost years of time and millions of money. Geology and development dissipated the many-lode theory, the fact being that the Comstock lode has a dip of 45° to the horizon, and while it was in process of formation large bodies of porphyry split off from the hanging-wall, fell down into the veinstone and were there suspended, leaving a seam of quartz above as well as one below. These pieces of hanging-wall are usually long, narrow, and deep, but not large enough in any direction to make two lodes out of one. The stocks of the Silver Mountain Mines were affected, and it might almost be said governed, by the influence of those of Virginia City. When the great Comstock developments were first made the papers of San Francisco teemed with articles congratulatory on the fact of those mines being owned by Californians, and showed how unfortunate it would have been had those great mines been owned by foreign capitalists, who would have drained the Pacific Coast of the millions taken out of those mines during the past few years to the benefit of San Francisco. The day is not far in the future when the papers of San Francisco will be bewailing the day when they allowed some of the mines of Alpine County to pass into the hands of non-residents. The best mines of Alpine have been, with but few exceptions, owned by poor men, who are anxious to see the mineral wealth of Silver Mountain developed. After years of patient waiting the "oldest inhabitant" is realising a change, and since the busy days of 1864-5 there has not been the activity in mining affairs that is now witnessed. The Carson Review says:—"A number of claims have changed hands, mostly in the interest of wealthy London capitalists, who are investing largely after a thorough examination of our mineral resources by competent mining experts, who have been sent to this country on special missions and in different interests, their reports invariably agreeing as to the mineral wealth of the county. The entire series of ledges in the Scandinavian Canyon are now located, and to perfect titles and prevent blackmailing operations after the mines shall have become sufficiently developed to excite the cupidity of unprincipled men. United States patents to a number of claims have been obtained. We (says the same authority) are beginning to receive a flood of capital, so desirable in opening up a gold and silver mining district, and those whose confidence in our mineral wealth impelled them to remain here and battle with adverse fortune during a decade of years will yet be fully recompensed for their years of hopeful waiting. The Londoners have developed some of our oldest properties to an extent to warrant great investments in neighbouring claims, and have done so without creating any excitement calculated to thwart them in their purchases. Now that they have concluded—in a great measure—their investments, they will soon be in a position to ship bullion, which will go to England. No mining district on the Pacific Coast offers greater inducements to investors. Within 26 hours comfortable travelling of the Bay City, our mountains are clothed with the stately pine, and we are blest with the purest water in the greatest abundance—advantages possessed by no mining district in the State of Nevada." According to the Alpine Chronicle—the leading county paper—a mining expert has just arrived to examine the mines for San Franciscan parties. "If (says this authority) he understands his business he cannot report other than favourably on the Silver Mountain Mines," adding "that it is time the mining men of San Francisco were looking around to get a foothold in Alpine before Eastern and London capitalists secure our best mines, and they are doing so slowly but surely."

For producing oxyde and chloride of zinc Mr. HARTLEY KENTON, of Warrington, proposes to grind galvanisers' flux, lixivating the soluble salts from the oxide of zinc, and other impurities where colour in the oxide is no object, or he removes the coke if white oxide of zinc is required in any convenient manner. The oxide of zinc so obtained he furnaces or dries in any convenient manner. He then removes the ammoniacal salts in the usual way from the soluble liquors so obtained, and then precipitates the iron in such liquor, or in any other chloride of zinc liquor in which chloride of iron is present by chlorate of magnesia, or by means of sulphate of magnesia or kieselate he removes the lime from chloride of zinc when chlorate of lime has been used to oxidise the iron.

The nature of the invention of Mr. S. P. TASKER, of Philadelphia, for bending metal plates into tubular form consists in the first place in the combination of a revolving tapered mandrel, with three or more bending rolls which revolve in opposite directions from the movement of the mandrel, whereby they gradually bring the plate to be bent into a cylindrical form as it passes from the large end of the mandrel to its small end. These rolls are so set as to leave a space between them and the mandrel equal to the thickness of the plate. And they may be either of cylindrical or tapered form; yet he prefers the tapered form, and arranges their large ends with the small end of the mandrel, so as to have their journals parallel with the journals of the mandrel. He further proposes the combination of a revolving bed and a pair of feed-rolls with the mandrel, and the bending rolls for feeding the plate to the rolls the feed-rolls being connected with the bed and turning with it. The operation is very simple; the plate to be bent being entered between the feed rolls, and the bed, mandril, and bending rolls being revolved by any suitable gearing, and the feed rolls being carried around with the bed, the plate is carried forward through a channel, and as it passes between the mandril and the bending rolls it is gradually brought into a cylindrical form until it passes from between them at the small end of the mandril, and either a butt joint or a lap joint is formed by the finishing process of the bending operation. When the machine is intended to make lap joints it is necessary to have a longitudinal groove extending from the small end of the mandril a few inches, so that one side of the lap can be depressed while the other side is pressed on it by the bending rolls.

AND LIST OF PRICES

During the past week this market has continued quite inactive, and, beyond some business in foreign copper concerns, home lead mines, and oil companies shares at advances, there has been nothing remarkable, and a generally lower range of prices. In shares of iron and coal concerns, Ebbw Vale have declined 15s.; Bulckow, Vaughan, A. 10s.; Nant-y-Glo and Blaina (preferences) and Shotts Iron (new), each 5s.; Benhar, is 31.; and Glasgow Port Washington, 6d. The meeting of the Scottish Australian Company will be held on the 3rd inst. and August coal sales are reported 16,199 tons. Not much doing in Newport Abercrombie, although it is stated the black vein seam of steam coal they lately struck is about 9 ft. thick, and the produce the best of the district. A petition will be heard on the 3rd proximo regarding the winding up of the Clec Hill Company. Bath Colliery A shares are very depressed from the company not succeeding in raising more capital. Andrew Knowles and Sons are at 72s. 6d. The 6d. Cardiff and Swansea, 32s. 6d., buyers. The 6d. Cardiff, Vaughan, 80s. to 80s. Consist Iron, 10½ prem.; bidders, 10½. The 6d. New Sharlston Collieries (pref.), 77s. 6d. to 82s. 6d. Sherrin bridge, 40s. to 50s. prem.; new, 11½ to 12½. South Wales Smelting, 58s. Sellers West Cumberland, 10½ dis. In shares of foreign copper concerns Cape has been dealt in at 39½, showing an advance of 2s. on last week's nominal price (37½). Tharsis are also raised 10s., and Yorke Peninsula (ordinary), 40s. Another factory report is to hand from the Yorke Peninsula Copper Company's properties. Tharsis 5 per cent. debentures have been dealt in at 102. There is, however, a drop on the two Canadian companies—namely, 5s. on Huntington and 3s. on Riverton.

In shares of hominines, Glasgow Caradon have been reduced 1s.; the last sale of 255 tons on the 19th inst., realising 1112*l.*, or an average of 90*s.* 10*d.* per ton, compares with 255 tons at 83*s.* 9*d.* last month; 245 tons at 113*s.* 9*d.* in 1875; 245 tons at 112*s.* 1*d.* in 1874, and 308 tons at 95*s.* 5*d.* in 1873. Cathedrals were sold at £600 as 10*s.*; but are held for a better price now. Boddiers, Grogwinston, South Ayrshire, and West Valley, and West Wye Valley have been enquired for. The amount are at 12*s.* 6*d.* to 15*s.* 6*d.*; Bamfylde, 10*s.* 1*d.*, sellers; Belford, United States, 8*s.*; Carnegie Bros., 6*s.*; Carn Brew, 3*a.* to 6*s.*; Carrington, 10*s.* 1*d.*, seller; East Loyley, 20*s.*; Dolochin, 33 to 35*s.* 6*d.*; Dring, 21*s.* 6*d.*; Galloway, 10*s.* 1*d.* to 20*s.*; East Lowly, 20*s.*, sellers; Great Laxey, 27*s.* 6*d.*; Great Wheel Vw, 10*s.* to 12*s.* 6*d.*; Gunniskale (Cliffers), 4*s.*; Leahish, 17*s.* 6*d.* to 17*s.*; Llanyrwst, 3*s.* to 4*s.*; Marke Valley, 27*s.* 6*d.*; North Laxy, 14*s.* to 15*s.*; Parys Mountain, 13*s.* to 15*s.*; Pennersey, 12*s.* to 30*s.*; Presstruth, 14*s.* to 15*s.*; Prince of Wales, 4*s.* to 6*s.*; Roman Graves, 13 to 13*s.* 4; South Crofty, 12 to 13*s.*; Tincroft, 10 to 10*s.* 10; Tinicroft, 18 to 19*s.*; Van Consols, 40 to 50*s.*; West Bank, buyers; West Frances, 80*s.* to 90*s.*; West Maria, 1*s.* to 1*s.*; West Tankerville, 32*s.* 8*d.* to 37*s.* 6*d.*; ditto (pref.), 45*s.*, buyers; Wheel Kitty, 50*s.* to 60*s.*; Wheel Unity, 25*s.* to 30*s.*

The prices of gold and silver mines the only change is a rise of 5*s.* on Richmond by the week's run is 237,000*l.*. The Port Phillip Company seems again to be making profits; and the Javall is 100*l.* if the same way. The Eberhardt and Kuntze Company have received 19 bars, valued at 4500*l.*. A petition to wind up the Mammoth Copperopolis Company of Utah will be heard on the 12th inst. Don Pedro-3, Almada and Tirito are 5*s.* to 6*s.*; Argentine (Gold), 5*s.* to 7*s.*; Frontino and Bolita, 3*s.*; Emma, 7*s.* 6*d.* to 12*s.* 6*d.*; Flagstaff, 17*s.* to 20*s.*; La Paz, 22*s.* 6*d.*; Malabar, 7*s.* 6*d.*; Alma, buyers. Gold Run about 8*s.* 9*d.*; X-L, 1*s.* 10*d.*; Kapanza, 5*s.*; Pastena Calaca, 10*s.*; New Pacific, 6*s.* to 7*s.* 6*d.*; S-J, 3*s.* to 3*s.* 6*d.*; Teconia, 7*s.* 6*d.* to 10*s.*; South Aurora, 7*s.* 6*d.* to 7*s.* 6*d.*; Fuller's Reef shares have also been enquired for. In shares of other concerns Oakbank have been raised 5*s.*; ditto (new), and Young's Parafine each offer at 1*s.* and a decline of 7*s.* 6*d.* in Dalmeny, and 5*s.* on Uphall. West Calder each offer at 1*s.* Runcorn Soap and Alkali are at 70*s.* to 50*s.* dis. In shares of miscellaneous companies there has been nothing doing, and the only movement was in Lawes Chemical, 7*s.* Langdale, 8*s.* to 9*s.*. Milner's Silver, 95*s.* Newcastle Chemical, 6*s.* to 7*s.* 6*d.* buyers. Palmer's, B, 17*s.* of the several days' business follow:

[illegible]

SILVER MOUNTAIN MINES—**EXCHEQUER, I. X. L., &c.**—Silver Mountain seems destined at an early period to become a successful mining centre, second only to its neighbour, Mount Davidson, around which nestle the famous Comstock mines. Situated on the summit and eastern slope of Sierra Nevada, the country is truly Alpine in its external features and character. The Sierra, along its western boundary, rises to an elevation of nearly 10,000 ft., the Silver Mountain range running north and south across its centre, having an altitude of nearly 12,000 ft. above sea level. Even the lowest valleys have an elevation of 5000 ft., many of them lying much higher. Almost the entire region is covered with heavy forests of pine and fir, from which immense quantities of lumber and firewood are made yearly. The Comstock mines and mills alone will, it is estimated, this year consume 260,000,000 cords, worth at \$12 per cord, \$3,120,000; some of this is obtained from the forests of Alpine County, and floated down the Carson river.

In view of its great altitude and the precipitous character of its mountains, covering the Sierra at one of its most broken and lofty points, this has been most aptly named—Alpine County. A rugged and scarcely less elevated spur strikes northerly from the main chain crossing its eastern boundary, thereby rendering nearly the entire county one continuous mass of mountains. It is bounded on the north-east by Nevada, on the south by Mono, on the west by Calaveras and Amador, and on the north by El Dorado; its average length measured north and south is 40 miles, and 33 miles in breadth. The portion lying east of the Sierra is cut in every direction by the two main forks of the Carson river and their numerous tributaries. Many of them are very wild and beautiful, being skirted by grass-slopes or bordered by plats of lawn-like meadow land. In most instances, however, they are destitute of these grassy surroundings, being closely hemmed in by dark forests or shadowed by impending slips of granite. Two of them, and from this circumstance and the cerulean hue imparted to their waters by their great depth, named the Twin Blue Lakes, constitute the head fountain of several large streams that make their way westward into the Pacific, while in close proximity is the source of the Carson flowing eastward to be swallowed up in the great desert of Nevada. Some of these lakes are shallow, while others have a great depth, being fed by the melting snow.

Alpine County's great interest is, and must always be, its vein mining. Throughout well-defined and masterly gold and silver veins have been found, and some of them of great richness; they are usually large in size and cropping boldly, being often traceable for miles by their surface projections. In a small and imperfect way some considerable work has been done, but little exploratory labour of a thorough and systematic kind performed, although several mines have been developed to a point of limited production. Owing to the tremendous upheavals of this region, the lodes are strong, compact, and deeply fissured, although in many cases displaced and disturbed in their upper portions. The veins generally are of unusual size, with unsurpassed facilities for the economical extraction and reduction of their ores. Running in most cases across the top or along the slopes of precipitous mountains the lodes can be opened out to a great depth by comparatively short adit levels. With such natural and physical advantages the ores can be made highly remunerative, even if of low grade, whereas development is proving just the opposite to be the case.

As with the now celebrated Comstock Mines, the Silver Mountain district of Alpine County partook largely in 1862-3 of the great excitement which spread throughout California, and thousands of miners crowded the mountains to work in newly-discovered mines, or to seek for others. In every town companies were formed to equip and send out prospectors. During this frenzy thousands of miles never before visited by white men were explored and examined, and many thousand of metalliferous lodes found and claimed. Then it was that Virginia City upon the Comstock Lode grew up, and Silver Mountain City was created by the celebrated "bonanza" discovery in the I. X. L. Mine. Both these mining centres were soon the home of a large and excited population, every man owned thousands of feet of argentiferous lodes, and considered himself either possessed of a fortune or certain of soon acquiring one. The confidence in the almost boundless wealth of the territory west of the Rocky Mountains was universal, but difficulties arose in converting their ore into ready cash. Men who considered themselves millionaires had sometimes not enough money to pay for a dinner, and in their dress they looked like beggars. There was much difficulty in extracting the metal even from the richest ore; there were no mills to crush the rock, no skilful metallurgist to reduce the ore, and no confident opinion in regard to the best means of extraction. The simple process used for reducing auriferous quartz would not suffice. Gold exists in the metallic form, and so soon as the rock is pulverised can be obtained by washing or amalgamation, but silver is in chemical combination with baser substances, and must be separated from them by chemical influences before the metal will submit to unite with quicksilver, by which it must usually be caught. While the metallurgists were working away at their pans

FOREIGN BONDS.—The belief that the Argentine Confederation must benefit indefinitely by the rise in tallow has taken firm hold of the minds of persons who do not trouble themselves to enquire whether the Republic has much tallow to sell, or whether any conceivable price to individual shippers will add anything to the resources of the Government, which is all that bondholders really need to concern themselves with. The recovery in Uruguayan is partly owing to the same circumstance, but there is, besides, an idea among many connected with the River Plate that this Republic is slowly improving in material wealth, and it is worthy of note that the Buenos Ayres journals speak very hopefully of the progress made under Colonel Latare's administration. As something has been paid to the internal creditors it is now hoped the Montevideo dictator will bestow a trifle upon the patient holders of the loan contracted in England.

RAILWAYS.—The publication of rather better traffic returns by the southern lines had a stimulating effect in the early part of the week upon what was otherwise a very inactive though steady market. The fall in Great Western was attributable to Capt. Tyler's report, which was regarded as unfavourable.

CHICAGO SILVER MINING COMPANY.—Too frequently at the meetings of mining companies the shareholders have to consider, not whether they shall pay a larger or smaller amount of dividend, but what is the best course to be pursued to obtain any profit at all. The directors of the Chicago Mine, however, are in the happy position not only of being able to recommend a dividend at the rate of 8 per cent. per annum, but also to keep a very handsome sum in hand, either to form a reserve fund, or to be expended in adding to the property should suitable adjacent mines be placed on the market at reasonable prices. A very small number of shareholders advocated the distribution of a larger dividend, but the majority of the meeting followed the very sensible and prudent advice of the

BRITISH MINES.

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which will be found in another column, is very satisfactory, and the agent writes "the mine will speedily satisfy every expectation that has been held out respecting it." In our last The Lovell Mine report got confused with Glenroy, and through a clerical error was printed "The level;" the paragraph should have read—"The Lovell is looking well, the points in operation in the aggregate being worth 101 $\frac{1}{2}$ per fathom." North Laxey, 12s. to 14s.; Van, 36 to 38; East Van, 8s. to 9; Ladywell, 1 $\frac{1}{2}$ to 1 $\frac{3}{4}$; Pennerley, 1 $\frac{1}{4}$ to 1 $\frac{1}{2}$; Pennant, 5 $\frac{1}{2}$ to 5 $\frac{3}{4}$; Dyllife, 4 to 4 $\frac{1}{2}$; Glyn, 2 $\frac{1}{2}$ to 2 $\frac{3}{4}$; West Chiverton, 18 to 19; West Craven Moor, 12 to 12 $\frac{1}{2}$. Clementina Lead, 3s. to 4s.; this mine is now in fork, and the agent anticipates early success in the operation that will now be commenced. Rookhope Lead, 15s. to 17s. Devon Great Consols, 2 $\frac{3}{4}$ to 3 $\frac{1}{4}$; the lode in the 175 cross-cut north has improved to 8 tons, or 30 $\frac{1}{2}$ per fathom. In the 160 east 2 ft. of the lode is being carried, worth 3 tons, or 10 $\frac{1}{2}$ per fathom. The different points in operation are worth in the aggregate 41 tons of the copper, or 158 $\frac{1}{2}$ per fathom.

IRON.—The position of this market has not improved, and as the season is now rapidly advancing towards its close there is little or no probability of an improvement this year. Within another month shipments to the northern ports will have been completed, and it is difficult to see that anything of value will remain after that time sufficient to support present prices. It seems a most extraordinary proceeding to be forever trying to prop up a decayed market, when its weakness is so palpable and its decline so apparent, and when the only way to preserve any of its value is to reduce the demand but for the purpose of crushing foreign competition. The shipping trade, of course, suffers more than any other branch, and the loss to the country is of the most serious consequence. A false character is given to the market by the maintenance of current rates, for the demand does not in any way justify them, and the immediate prospect of the future condemns them. No more iron can be sold, and no more is wanted. To continue to keep the market at such a level is to keep it at a miserably dull dead-end. Nothing but a miserably dull dead-end. A season in which above all others the working man requires many extras, and the chance of getting them depends upon obtaining full employment, and how is it possible to secure this when the Belgian houses are allowed to take away the orders. There is no doubt there will be intense suffering in the Iron districts this winter, and chiefly because the men are so ignorant of their own position, and so ready to believe that if they persist in pursuing this course they cannot blame anybody but themselves. To attempt to exact more than the state of trade justifies is a monstrously bad system, and only tends to the impoverishment of those who practise it. Scotch pigs have undergone some slight variations, and m.n. are now quoted 87s. cash; the present price is not likely to be upheld beyond another month, if the market be not unusually active in the sales. A falling off will then be experienced in demand as well as consumption.

The Mining Market: Prices of Metals, Ores, &c.

SHIPMENTS.	
Week ending Oct. 21, 1876	Tons 10,278
Week ending Oct. 23, 1875	8,108
Increase	2,170
Total decrease for 1876	70,534
Imports of Middleborough pig-iron into Grangemouth:—	
Week ending Oct. 1, 1876	Tons 4,179
Week ending Oct. 23, 1875	2,270
Decrease	1,909
Total increase for 1876	56,633

LEAD.—During the past week our market has undergone scarcely any change. Sellers have held firmly to their prices, and are not likely to lower them while supplies keep moderate and the prospects of war continue.

SPELTER.—In moderate request; sellers maintain previous quotations. Zinc at public auction has been sold down to 20*l*. 5*s*., being a reduction of 5*s*. per ton upon last sale. The importations of foreign zinc are so large that they greatly interfere with the sale of English, and render the manufacture of it a very bare business.

QUICKSILVER.—Sales in small quantities only continue to be effected at 8*l*. per bottle for Spanish, but below this figure sellers decline to make sales.

STEEL.—In slightly better enquiry. German pig and faggot fine, 11*l*. 15*s*. to 12*l*. 15*s*., according to brand; Swedish keg, 15*l*. 10*s*.

TIN-PLATES.—The demand is still very slack, although there has been rather more doing this week, and orders are very much wanted at the works to avoid accumulation of stocks. The advices from Melbourne are not satisfactory, and merchants are receiving very few orders. The trade in America, however, seems to be decidedly improving, and it is hoped that there will shortly spring up an American demand.

TIN.—The market opened flat at the commencement of the week, and as buyers appeared shy sellers began by offering Straits for November below the current prices at the close of last week, but 5 tons only was sold at 72*l*. 10*s*., and 15 tons Australian at 71*l*. 15*s*.

to 742. cash. In reduced price did not move buyers to bid for any quantity, and thus by a small sale only the feeling of the market was ascertained, and there was evidently no disposition on the part of buyers to accept risks. On Tuesday the market remained quiet, and Australian was sold at 741. 10s. to 741. 15. for delivery all the year, and Straits 732. 5s. On Wednesday there was a much better market, and it was reported that smelters were beginning to buy, and also that there was a covering for the settlement at the end of the month. Australian was sold at 744. cash, and Australian 742. to 742. 10s. and 732. to 732. 10s. for arrival. Banca changed hands at 744. cash. Again on Thursday, the market was fairly brisk, and Australian was sold at 737. to 737. 5s., and Straits at 744. 5s. for October, and 744. 10s. cash. To day Straits is ruling at 741. 10s., and Australian 737. to 737. 10s., but the tone of the market at the close of the late 'Change was weaker.

THE IRON TRADE.—(Griffith's Weekly Report).—Friday Evening. The market for Scotch pig-iron at the Glasgow Exchange closed this morning at 57s. 6d. for No. 1. There was no business reported this afternoon on this Exchange. The price of Scotch pig-iron at Glasgow has advanced 1s. 6d. since the 1st inst. The above price is about 6d. higher than the closing price this day week at Glasgow. We quote makers' No. 1 iron:—Gartsherrie, 65s. 6d.; Coltness, 69s.; Calder, 66s. 6d.; Langloan, 66s.; Summerlee, 61s.; Monkland, 57s. 6d., f.o.b. Glasgow; Glenarnock, 63s. 6d.; Eglington, 57s. 6d., f.o.b. Ardrossan; Shotts, 65s. 6d., f.o.b. Leith; Kennel, 58s., f.o.b. Boness. The uncertain state of politics in the East of Europe has unsettled the improved position in which the iron trade presented a fortnight ago. The price of iron has fallen 1s. 6d. in all the principal iron-producing districts, and the trade must be reported quieter, with less disposition of buyers to enter into extended business. The only orders on this market are for sheet-iron, doubles and latten being the kinds of sheets in most request.

The demand keeps up also tolerably well for sheet-iron for India, and the galvanisers generally have bought freely of sheet-iron at and since Quarter-day. There is some business doing in nail rods. Boiler plates are flat, and second class bars are quieter in this market, and can be bought a trifle lower than at Quarter day. On the contrary, all marked Staffordshire bars are firm at 9/-; the Earl of Dudley's, 9/- 12s. 6/- We have no change to report in the tin plate trade. The makers are still restricting the make of this article, and we hope soon to hear that the demand will exceed the supply; for the present we cannot say that is so. One manufacturer of respectable standing sold in Liverpool last Thursday 5000 boxes of tin plate, and we are well supplied with all kinds with one house. In Staffordshire most of the manufacturers have orders to keep the sheet mills running full time. The orders given out at Quarter-day for second-class bars and other kinds keep the works in operation for the present. The leading houses appear to have sufficient orders to keep going. Pig-iron is a little weaker, and very little business has been done in the raw material since Quarter-day.

Messrs. FRY, JAMES, and CO.—COPPER has maintained its stronger position all round, whilst in Australian there has been further improvement in values. One or two regions are being held in higher prices than smelter, and are ready to pay, and hence we have, but a limited quantity of English being made. Lead is found to be in slightly improved demand for some kinds, but generally speaking it is extremely flat still.—TIN is steady; the business of the last fortnight has been considerable, and prices are somewhat stronger.—SPELTER is in steady demand, and the late improvement in values is maintained.—LEAD is firmer at quotations, which are higher than in the last week.—PLATE and SHEET

Messrs. **PICKLEY AND ABELL**—**GOLD**: 29,600*l*. from India is the only arrival of gold we have to report for the week. There is, however, no demand for bars for export, but sovereigns continue to go to *exchequer*, 257,000*l*. having been withdrawn from the Bank since the 19th inst. The *P. and O.* steamer takes to-day 101,000*l*. of gold, and, subsequently to the 20th inst., the *Bank of England* will be enabled to issue the issue of India Council *Drabs*, transaction have taken place at 53*½*d. per oz., the market remaining tolerably firm at that quotation. The imports during the week comprise 110,000*l*. from Germany, 8420*l*. from New York, and 10,430*l*. from the West Indies. The steamer takes 155,000*l*. to Bombay.

The MINING SHARE MARKET has been firm, but only a moderate amount of business has been transacted since our last, and the dealers are chiefly engaged in the settlement of the fortnightly account.

The mines dealt in have included Roman Gravels, Pennerley, Parys Mountain, West Chiverton, Leadhills, Van, East Van, Van Consols, Glyn, Clementina, Tincroft, South Condurrow, Tankerville, West Tankerville, Rookhope, Prince of Wales, Treleigh, and a few others.

Tin Mines have become in demand, and before our next—probably in a few hours—we shall hear of a rise in the standards for tin ore. [This anticipation has, we are glad to say, a ready been realised, a telegram from our Cornish Correspondent, given in another column, announcing even a greater rise than had been hoped for.]

Roman Gravels, 13½ to 14; the lode has been cut into at the 106, and as far as seen is equal to the corresponding ground in the 95 cross-cut. The sale of lead ore this week (220 tons) has realised 333-27. 5s. Tankerville, 10 to 10½; the 180 cross cut is nearly into the lode. The sale of lead ore—150 tons—realised 226-2. 15s. West Tankerville, 1½ to 1½. In Leadhills a large business has been done at 7½ to 7½. Great Loxey, 19½ to 20½. Glenroy, 3½ to 4½; the report,

At Gunnislake (Catters) meeting a dividend of 1s. per share was declared. The accounts showed a profit on four months' working of 504*l.*, and a balance in hand of 1659*l.* The copper ores sold realised 3089*l.* The engine-shaft is down 200 fms., and the lode has come into the shaft, and though not equal to what it was in the 188, the agents believe that still further sinking and extension of levels will result in discoveries equal to previous values. Parys Mountain, 12s. 6*d.* to 15*s.*; the 90 cross-cut: stone is still producing stones of copper ore and sulphur. Some of the ore, the agent writes, is of a strong quality, and evidently bordering upon something different from anything yet seen in the mine. Carn Breare firmer at 34 to 36. Cook's Kitchen, 3*½* to 3*¾*; Tincerot, 18*½* to 19*½*; Hingston Down, 4 to 5; Marke Valley, 12 to 13; Prince of Wales, 3s. 6*d.* to 5s. 6*d.*; South Condurrow, 4*½* to 5*½*; West Basset, 4 to 4*½*; North Cornwall, near to 4 prem.

Cathedral (new issue), par to $\frac{1}{2}$ prem.; the lode is still worth 3 to 4 tons of yellow copper ore per fathom. Van Consols, 2 to 2 $\frac{1}{2}$; the course of lead valued at 6 tons per fathom will be available for working by the new drawing shaft next month. Great West Van, 10s. to 12s. 9 $\frac{1}{2}$; Penstruthal, 11s. 3d. to 13s. 9 $\frac{1}{2}$; the mine continues to improve for copper in the bottom workings. Glyn, 2d. to 2 $\frac{1}{2}$; the Van lode will be intersected in about 2 fms. further sinking.

Argentina, 5 $\frac{1}{2}$ to 6 $\frac{1}{2}$; Eberhardt and Aurora, 8s to 8 $\frac{1}{2}$; Frontino and Bolivia, 1 $\frac{1}{2}$ to 1 $\frac{1}{2}$; New Zealand Kapanga, 5s to 5 $\frac{1}{2}$; New Quebrada, 2s to 3 $\frac{1}{2}$; Richmond, 3 $\frac{1}{2}$ to 9 $\frac{1}{2}$; Santa Barbara, 2s to 2 $\frac{1}{2}$; Javalil, 9s. to 11s.; a telegram has been received which gives the profit for the month at 1000*l*. Chontales, 5s. to 7s. 6d. Cordes of Chili, 5 to 5 $\frac{1}{2}$; the lode in the new discovery, in the "Isolina," is valued at 8 tons of rich ore per fathom. The lode in the bottom of the old workings is yielding 90 ozs. of silver to the ton of ore. The mines are in full work, and Mr. Seacombe, the company's manager, reports favourably upon them. Exchequer, 1 $\frac{1}{2}$ to 2 $\frac{1}{2}$; the 400 drift has nearly reached the lode, and we understand the indications are satisfactory. I.X.L., 1 to 1 $\frac{1}{2}$; the 200 is being driven to come under the rich bonanza gone down in the upper working. The construction of the mill is progressing satisfactorily.

The Market for Mine Shares on the Stock Exchange during the week has been comparatively inactive, but without any tendency to weakness; on the contrary, in some departments heavy transactions have taken place, especially in low-priced foreign shares. The metal market points to improvement, partly in response to the more encouraging aspect of trade, as indicated by the Board of Trade Returns. The mines mostly dealt in have been St. John del Rey, Argentine, Richmond, Exchequer, Eberhardt, Candes, and I.X.L.

New Zealand-Kapanga, 5 to 5½; there has been again a large business in these shares and investors are absorbing them rapidly. There can be no doubt as to the eligible nature of these shares as an investment. The news from the mine continues good. St. John del Rey, 340 to 350; Argentine, 5½ to 6½. Port Phillip, 4 to 4½; the profit for the month ending Aug. 16 was 705½; the yield was 4 dwts. 12 grs. per ton. Javali, 3 to 4; a cablegram announces a run, yielding 700 ozs. of gold, leaving 1000½ profit.

Scottish Australian, 2 to 2½; the accounts for the half-year show an available balance (including 374½% brought forward) of 18,250. It is proposed to pay a dividend of 17½ per cent. per annum (free of income tax), leaving, after adding 725½ to the reserve fund, a balance of 5000½, to be carried forward. Yorke Peninsula, 1½ to 1; the prospects at the Kurilla Mine are reported as encouraging, and the manager states that only a somewhat higher price for copper would, judge the balance on the right side.

Tharsis Sulphur, 21 to 22; the shares are this week quoted for the first time in the Official List; this, and the fact of the company having just declared the very satisfactory amount of $11\frac{1}{2}$ per cent., being the second half of the dividend of $22\frac{1}{2}$ per cent. declared out of the profits of 1875.

Condes, 5 to 5½; the latest advices (Sept. 12) from Mr. James Secombe report that they had worked their way through the snow and reached the Isolina Mine. The canchos and workmen's houses were filled with snow in places to the depth of 5 ft., and snow had drifted into the mine, but beyond this there was no snow on the mines. There were few men, as until now no one had ever attempted to reach the mines till the end of October or beginning of November, but he had no doubt they would come up by degrees, as it was known that operations were resumed. The northerly winds kept the hill side clear of snow, and this confirms his opinion that the

mines can be worked all the year round. In the Batter part of Isolina he believes, judging from the outcrop of the lode going eastward, and its appearance in the levels, that they have a fine prospect in that direction. The mine is perfectly dry, and the lode easy to work. In Dawson's (recent discovery) deepest workings the leader part of the lode is 1.25 metre wide, and will yield 8 tons of rich ore per fathom. The smelting establishment at Corral Quemado is being put in order; he is having the old reverberatory furnace repaired, and believes the regulus and accumulation of bottoms will cover cost of repairing; he believes the best portions of this will give over 350 oza. of silver per ton, and much copper and lead. The new discovery on the Isolina lode is valued at 1200, per fathom. The high-class ores will be shipped to this country, while those of an inferior description will be smelted at the company's works. The company's smelter has arrived at the mines. Argentine, 53 to 64.

Richmond Consolidated, 91 to 93; the usual telegram gives the weekly run at \$37,000; they hope to start the two new furnaces this week. The refinery has produced doré bars to the value of \$25,000. The accident to the blower which supplied the blast to the furnaces has required a much longer time than was anticipated to remedy the defect, but it may be gathered from the telegram that all is again in order. The weekly report from the manager has not yet reached the London office. The delays of late, if attributable to the Post Office, should be brought under the notice of the authorities. It is understood that all the accounts required to com-

authorities. It is understood that an agreement has been reached between the

plete the annual balance-sheet have arrived, and will shortly be submitted to the auditors. Eberhardt and Aurora, 8½ to 8½; a further ship-out has been received of 19 bars of silver, valued at pre-shipment £400. Exchequer, 2 to 2½; at the date of the last advices the price was on the point of being cut into at the 400 ft. level, and the lode was of the hard character of the country rock (a favourable feature) satisfactory results are confidently looked for. The 200 has rich ore in the sole of the drift, a sufficient proof of the value of the vein in depth. The mill was nearly completed, and the impression is it must now be running upon different grades of ore to test the chloridising properties of the O'Hara furnace. I. X. L. 1 to 1½; the mill was in course of rapid construction, and the manager was about contracting with Mr. O'Hara for the erection of a chloridising furnace, showing that confirmatory evidence had been obtained as to the merits of this system of roasting.

The market for Hydraulic or Gold Washing Companies shares on the Stock Exchange has been steady during the week, though but little business has been marked. This class of mining meets more attention than it has hitherto obtained from investors on this side. The Americans eagerly purchase all claims they can, and the area under washing steadily increases from year to year. The properties dealt in on this market are very fair representatives, and the results obtained hitherto are considered to be such as should make them more worthy of notice. Sweet and Creek, for example, has paid fairly well, and its failure now is attributable to the exhaustion of the auriferous gravel. The gravel throughout California is rich, and where proper care has been taken to have good outlet and fair water supply, cases of failure to get good profits are rare. At times it happens that the gravel to a certain level has been washed away, making it incumbent upon the owners to run tunnels, &c., to unbottom the remaining area, but they are usually more than compensated for this by the increasing richness of the gravel towards the bottom or on bed-rock. A few transactions were recorded in Colombian hydraulic mines shares, and Malpas and Malabar leave off firm at last week's quotations. The telegrams of several cleans up at these mines will be found in another column. Blue Tent, 3 to 3½; washing is still going on at this company's South Yuba claim, which looks well for the coming season. The last clean-up was satisfactory, and as it was made with bought water gives hopes of larger profits when free water is flowing through the company's ditch. Sweet and Creek, 3-16ths to 5-16ths; Mr. G. D. McLean anticipates similar results from the current run as from the last. Cedar Creek, ½ to ¾. Col. Ludlum is pushing on with every work to be ready for water. The Baker claim will be in working order before the rain commences, and great expectations are entertained as to the results to be obtained. Birdseye Creek, ½ to ¾; the Walunda tunnel is progressing rapidly, and good progress is also being made with the work required preparatory to resuming washing.

The market for Lead Mine Shares has been much more animated, owing to the prospects of the lead market being exceedingly good. Very large transactions in pig lead have taken place during the last few days. Considerable quantities of the metal have arrived from Spain and have also been great. Van, 35 to 38; the cross cut through the lode at the 105 is apparently just entering the productive part. No change in any part of the mine; all progressing well, and the section of the new engine fast drawing to a completion. Great West Van; the lode in the 46, east of Eliza's shaft, is valued at 2 to 3 tons of lead per fathom, and the 46, west of Old shaft, at 1 ton; these points are 50 fms. apart, and are being driven towards each other, thus showing a considerable run of productive lead ground. Van Consols, 2 to 2½; the raising of the new capital was a complete success, the whole of the shares having been subscribed for. The course of lead, valued at 6 tons per fathom, at the bottom of the mine will be available for working next month. Glyn, 2½ to 3½; Captain Roach reports his firm opinion that the sinking of the shaft on the Van lode (which will be reached in about 2 fathoms sinking) will develop lead of great importance. Pennerley, 1½ to 2; a full report from the agent appears in another column, from which it appears that the mine is improving in more places than one; in fact, the report is very encouraging.

Pateley Bridge, 2½ to 3½; the Lumb vein east, in the 10, is large, and producing 1½ ton of lead to the fathom; west it is worth 1½ ton per fathom. In the cross-cut in the 20 to cut this vein the driving has passed through several branches of spar, with rich spots of lead. The ground in the cross-cut from the engine-shaft is very congenial, and shows every indication of nearing a rich body of ore. West Pateley Bridge, 5½; the vein in the 56 is steadily improving, and the agent expects soon to get under the rich ore ground formerly spoken of. A level has been commenced from the bottom of the winze below the No. 2 shaft, where the lode is worth 16½ per fathom for lead. In the 42 the vein is under, producing saving work. Levilliers, 7 to 7½; there is an improvement reported in 6½ level, and shares have been enquired for. Grogwinion, 5 to 6. Wye Valley, 6 to 7; West Wye Valley, 3½ to 4½; St. Harmon, 3½ to 4. Cognac (Welsh) Gold Company held its ordinary meeting on Wednesday, under the presidency of Mr. E. Vickers, of Sheffield. The information received from Mr. Williamson, of the Geological Survey of British Columbia, and introduced to the company by Messrs. Johnson and Matthey, was to the effect that recent experiments had demonstrated that the ore can be made to profitably yield from 84 to 10 cwt. of gold per ton, irrespective of the visible gold. Whether the difficulty has been to save the gold by ordinary amalgamation; it is now proposed to simply concentrate and sell it as gold ore, for which there are many buyers. The gold is represented as extremely rich, some having been sold at 4½ lbs. 6d. per oz.; one stone of 3 lbs. yielded upwards of 2½ ozs., and a quantity of 650 lbs. of picked ore, by ordinary amalgamation, produced over 32 ozs. of gold. A resolution was passed to issue debentures to the amount of 500,000, of 100 each, to be allotted *pro rata*, and to bear an interest of 10 per cent. per annum, with the option of paying off at a premium of 10 per cent. This amount will be ample to complete the necessary alterations to the machinery and provide working capital. Cathedral (new issue), par to ½ prem.; the lode continues to yield 4 tons of yellow copper ore per fathom; this is looked upon as a permanent course of copper. Penstruthal, 11s. 3d. to 13s. 9d.; the mine continues to develop most favourably for a productive copper mine. Capt. Teague states that the sales of copper will be worth the larger, and also that the tin and copper lode has been cut near the junction of the granite and killas, which promises well for future development.

Subjoined are the closing quotations:—
 Dolores, ½ to 1; Carn Brea, 3½ to 3½; Devon Great Consols, 3½ to 3½; Dolores, 2½ to 3; East Caradon, 3½ to 3½; Glyn, 2½ to 2½; Great West Van, 3½ to 3½; Hingston Down, 4 to 4½; Levilliers, 7 to 7½; Marke Valley, 1½ to 1½; Pateley Bridge, 2½ to 3½; Pateley Bridge, 2½ to 3½; Pennerley, 1½ to 1½; Penstruthal, 11s. 3d. to 13s. 9d.; Roman Consols, 12½ to 11; Tankerville, 10½ to 10½; Tincroft, 18½ to 19½; Van, 35 to 38; Van Consols, 2 to 2½; West Ashton, 1 to 1½; West Basset, 4 to 5; West Caradon, 17 to 18; West Tankerville, 1½ to 1½; Wheel Crebor, 2½ to 3; Wheel Crebor, 2½ to 3; Almada and Tinto, ½ to ¾; Argentine, 5½ to 6½; Dolores, ½ to ¾; Cape Copper, 37 to 40; Cedar Creek, ½ to ¾; Chon-
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Notices to Correspondents.

* Much inconvenience having arisen in consequence of several of the Numbers during the past year being out of print, we recommend that the Journal should be kept on receipt; it then forms an accumulating useful work of reference.

ORE-WASHING MACHINERY.—Can any correspondent inform me, through the Journal, the best kind of dressing machinery, simple and cheap, for the separation of blende from lead? I believe Hunt's jiggling machine was once recommended for this purpose. Where can one of these be obtained? what would be the cost? and can the separation be completely effected by it?—R.

NICKEL ORE.—"C. W. D." (Queen Victoria-street).—The price of nickel ore, calculated on the basis of units of produce, varies considerably according to the other metals with which it is associated, and the nature of the impurities which the ore contains. It is frequently worth no more than a few shillings per unit, whilst contracts were reported to have been entered into at Paris for the purchase of a particular New Caledonian nickel ore, which is of a special quality and is contaminated with only readily separable ingredients at the rate of nearly 40 per unit.

NICKEL ORES.—"C. B." (Cornwall).—No British mines are known at present to be returning nickel ores on a commercial scale, although nickeliferous minerals are occasionally met with. Annabergite, for example, has been found in Wheal Chance, near St. Austell, with the arsenical nickel, and also at Pengelly Mine, St. Teath, but not in marketable quantities, and the same may be said of the copper nickel produced at the same mines. A vein of the latter ore was once reported to have been discovered in the 200 fm. level at Fowey Consols, but little has since been heard of it. The emerald nickel, a carbonate ore, with about 55 per cent. of oxide of nickel, is so rare as to be unworthy of consideration. It was originally noticed in Pennsylvania, U.S., and Dr. Heddle once met with it upon chromate of iron; he referred it to the decomposition of ordinary nickelites. Millerite, pure sulphide of nickel, is merely a specimen mineral, only met with occasionally, and in a few localities. The nickeliferous pyrites (nickelites) is that which has hitherto received most attention. Some fair parcels were sold many years since from Wheal Jane, Kenwyn, Cornwall. A considerable quantity was also found at Eossohossan Glen during some draining operations on the Duke of Argyll's property, two miles from Inverary. For some time the output was 15 tons per day from a shaft less than 10 fms. deep, and another mine was worked at Craignure, on Loch Fyne, about eight miles below Inverary; it fetched 20 years since about 2½ pence per unit of nickel in the ore. The New Caledonian ores are silicates, and, therefore, unlike any European ores of nickel.

TERRA COTTA.—An article was published, some years since, in the *Mining Journal*, advocating the use of Cornish or Devon terra cotta for decorative building purposes. Where can I now obtain an illustrated and priced catalogue of capitals, cornices, string courses, crows-steps, &c., of that material?—R. A. B.

Received.—"Weekly Reader." Next week—"W. G."—"T. B. L."—"Y. Z."—"Shareholder" (Wheal Basset).—"No Animus."—"A. Boudier."—"Correspondent" (Barnmouth) should write to the Chairman of the company—"W. F."—"Shareholder" (Glasgow). A report of the meeting appeared in last week's *Journal*—"Corubensis."—"C. E." (Leeds). We shall be glad of the particulars.

SHARE DEALING.—We never interfere in the sale or purchase of shares; neither do we recommend any particular mine for investment or speculation, or broker through whom business should be transacted. The addresses of most of the latter appear in our advertising columns.

IMPORTANT NOTICE.—REDUCTION OF POSTAGE ON THE "MINING JOURNAL."—In consequence of the new POSTAL CONVENTION, which came into operation on July 1, the postage of the *Mining Journal* to many countries will be reduced to one fourth. Henceforth the subscription will be 12. 10s. 4d. per annum (39 frs.), postage included, for the following countries. The amount will, if desired, be collected at the subscriber's residence at the end of each year. The subscription continues until countermanded:—Austria, France, Belgium, Denmark (including Iceland and the Faroe Islands), Egypt, Germany, Gibraltar, Greece, Heligoland, Italy, Luxembourg, Netherlands, Norway, Portugal (including Madeira and the Azores), Roumania, Russia, Servia, Sweden, Switzerland, United States, Malta, Turkey, Morocco, Tunis, and the Canary Islands. Spain 12. 19s. (50 frs.).

AVIS IMPORTANT.—AUX ABONNES ETRANGERS DU "MINING JOURNAL."—A cause de la nouvelle CONVENTION POSTALE il y a eu, à partir du 1^{er} juillet 1876, une grande diminution du prix de l'abonnement du *Mining Journal* pour bien des pays dont le taux des postes était jusque là bien élevé. A partir du 1^{er} juillet le prix de l'abonnement est de 39 frs., le port compris, pour l'Autriche, Belgique, France, Danemark et ses dépendances, l'Egypte, l'Allemagne, la Grèce, l'Italie, Hollande, Portugal et ses dépendances, Roumanie, Russie, Serbie, Suède, la Suisse la Turquie, l'Afrique septentrionale, etc. Le montant, si l'on le veut, sera touché à domicile, la fin de l'année. L'abonnement continuera sauf avis contraire.

THE MINING JOURNAL.

Railway and Commercial Gazette.

LONDON, OCTOBER 28, 1876.

NOXIOUS VAPOURS.

A Royal Commission, composed of able and scientific men, has just entered upon an enquiry of great importance to the manufacturing and commercial interests of the kingdom. That enquiry resolves itself into an investigation of the deleterious effects of vapours emitted by various manufactures and works upon vegetable and animal life surrounding such works, and also to ascertain if some means cannot be adopted whereby such deleterious effects can be averted. The subject is one which has long since engaged the earnest and serious attention of most eminent men, taxing the ingenuity of the most able chemists and mechanical engineers alike. Years ago it caused litigation of almost unparalleled duration and expense, and we know from personal knowledge it left anything but friendly feelings and recollections in the minds of litigants who hitherto had been on terms of the closest intimacy and friendship. Truth to say, the results of the experiments made, and the only partial adoption of the Acts already in operation, have not been productive of that amount of good which we had hoped. The enquiry, therefore, just commenced will, doubtless, be welcomed by all classes. The evil proved, and some feasible and comparatively inexpensive remedy pointed out, the great manufacturers will not hesitate to put it into practical operation, for the interests of none can be promoted by eternal warfare with their neighbours.

It would be useless for us to attempt to ignore the fact that the "vapours" emitted by many of our manufactures are "noxious"—i.e. productive of injury to the surrounding vegetation, and prejudicial to animal life. Should anyone doubt this, let him pay a visit to almost any of our great manufacturing sites, and he will be able at a single glance to trace the unmistakable effects of works' smoke upon crops and flowers, whilst hill-tops are almost denuded of vegetation. The protracted and expensive lawsuits which took place some 15 or 20 years since between the proprietors of the Red Jacket Copper Works, near Swansea, and an extensive landed proprietor near Neath, eight miles off, showed that trees were stunted in growth, shrubs almost destroyed, and vegetable life considerably injured, whilst oxen feeding upon the grass in the surrounding fields were partially poisoned by the precipitated arsenic, and were more or less diseased in the knee joints. No authenticated case of injury to life, however, was established at that trial, and it is questionable even to the present day whether, however unpleasant the fumes of copper smoke may be, it has a tendency to be prejudicial to human life. On the contrary, many cases of extraordinary longevity of life might be cited amongst those who have lived all their lives in the very midst of these smokes, enjoying the most robust health.

We will take it for granted that many of our large manufactures do emit "noxious vapours," alike destructive to vegetable life and prejudicial to that of animal. In order to establish this Dr. BALDWIN, of the Local Government Board, has been for some time past making enquiries as to the effects which the vapours emitted from chemical works, bone boiling, glass works, varnish making, and others of a like nature produce upon the vegetation of the adjacent districts and the health of the inhabitants, and this report cannot fail to be of great assistance to the Commissioners in their investigation. The reports of the various Inspectors under the Alkali Acts, both of 1863 and 1874, contain a good deal of valuable information. Those Acts, although they have accomplished some good, have not proved that beneficial character which was anticipated from them. Other works and manufactures unquestionably emit "noxious vapours," almost unchecked, which are prejudicial to animal and vegetable life, and which it must be to the interests of one and all to prevent as far as possible.

Whilst, therefore, fully recognising the value and importance of the enquiry which the Royal Commissioners have just undertaken, and even welcoming it in the interests of all, something should also be said from the manufacturing point of view. We are informed that several influential landed proprietors have subscribed to a fund for the purpose of securing a thoroughly sifting and exhaustive enquiry. We need hardly say that we hope and believe the Royal

Commissioners will not be influenced by such a circumstance—if such be a fact—and that no vexatious crusade is to be made against the proprietors of iron, copper, steel, patent fuel, and other works or manufacturers generally. These are the foundation of England's commercial stability and prosperity, and require and demand the protection of the Government from vexatious annoyance quite as much as the lands and estates of the wealthy proprietors. We well remember when the costly litigations in South Wales, to which we have already referred, were being carried on, and when, subsequently, proceedings were threatened to be taken against the copper works' proprietors, for non-consumption of these "noxious vapours," that crowded and enthusiastic meetings in Swansea denounced the threats, and resolutions were carried to the effect that "as the inhabitants lived by smoke, so should all works and manufactures be welcomed with open arms." We may not agree with this zeal and enthusiasm of already smoke-dried districts, but it shows the desires of those who literally live upon the prosperity of large works and manufactures. Again, it should not be forgotten that many thousands of pounds have been voluntarily expended by works' proprietors to abate the deleterious effects of these "noxious vapours." They acknowledge the evils almost inseparable from their business, and cheerfully test, at the cost of hundreds and thousands of pounds, the many mechanical and scientific appliances which are said to prove the desired panacea. In all justice and honesty these things should be remembered and appreciated by the Royal Commissioners while making their enquiry. We fully recognise the rights of the landed proprietors and agriculturists—rights which will always be somewhat antagonistic to those of the manufacturer and smelter, but we trust the landed proprietor will not push his rights and claims so far beyond legitimate limits as to become the source of vexatious annoyance. The proprietors of large smelting works and manufactures have hitherto practically proved that they do all they can to prevent any evil effects arising from the "noxious vapours" of their works, and if the means adopted have not proved efficacious the fault is that of the mechanical engineer or chemist rather than the manufacturer. As the Royal Commission upon the evil effects of "noxious vapours" has been chiefly instigated by landed proprietors, the *onus probandi* rests upon them to show that the manufacturers have been reluctant or neglectful to carry out every known means to remedy the cause of complaint. In all fairness, too, they should point out the mechanical or scientific appliances to be adopted, and if such were done we have no hesitation in saying they would be heartily welcomed by the manufacturing world generally, and quickly put to the practical test.

ENGLAND'S COMMERCIAL POLICY, AND THE WAR PROSPECTS.

At such a dull time as that through which we are now passing it is important that we should not either lose faith in our commercial principles or in the fact that nothing is happening to us which might not have been forecast by a thoughtful observance of the past. There is, unhappily, a disposition here and there appearing to make reprisals upon foreign countries who are commercially exclusive. Of this we have indications in certain crude suggestions coming from Sheffield, as well as in *vis-à-vis* utterances upon "Change in the coal and iron centres, with which every frequenter of those places has been made familiar. Such views may have been "condemned," as Mr. GLADSTONE phrases it, "by all the greatest authorities amongst Englishmen of the past and the present generation," but it is well when that condemnation is brought home to us under circumstances amply appreciable by men of varied mental power who are accustomed to deal with ordinary figures, and to spend most of their time in business pursuits that do not leave much room for the consultation of such authorities as those with which so great a statesman as the ex-Premier may well be familiar.

The other day, in Liverpool, Mr. G. J. SHAW LEFEBVRE, M.P., reviewed the state of trade in this country. In doing so he reminded us of facts which just now ought not to be allowed to escape our recollection. He would have us bear in mind that it was not more than seven years since this country was passing through a period of even more severe symptoms than those which are now experienced. The years of 1868, 1869, and 1870 were years of commercial distress. Great numbers of working men were unemployed. Pauperism had increased in an ominous manner. We were under much alarm about the future of our manufactures. It was said that we were in danger of losing our foreign markets, and that even our home markets were being invaded by foreign manufactures in those very trades in which we believed ourselves to be unapproachable. Two members of the present Ministry tried hard to obtain Government assistance to British artisans who were emigrating, and then, as now, existing commercial treaties were impugned because of the absence of "reciprocity." Even one of the members for Manchester, together with the member at the time for Coventry, attacked on this principle the French Treaty. The arguments which were then used are being used now, and they show how imperfectly understood are the principles of free trade by large sections of British traders, and how easy it is when trade is bad for even intelligent persons to abandon sound doctrine, and to relapse into errors of the most serious kind. Need it be cited how the three years of great distress ending with 1870 were followed by a rebound of prosperity which brought in three years during which the trade of England expanded enormously. Our export trade by 30 per cent. Trade profits were excellent; wages rose almost universally. How the coal trade benefited for the time all our readers know. That prosperity has passed; it has given way to a condition of things in which we see that prices of coal have fallen to almost those of 1871, the money wages of miners being reduced in almost corresponding ratio. Mr. LEFEBVRE is largely right when he says that we are now suffering in great part from the reaction after the prosperity of those years from the results of the speculative mania induced by it, from concurrent action of the same kind in the United States, and in part also from the repudiation of their debts by so many foreign States, who, while they were borrowers of our money, were also consumers of our productions, and who, now that they have ceased to borrow, have ceased to buy our manufactures. With cheap coal, with abundant capital, with moderate wages, with longer hours, and some more consideration for workmen for the interests of their employers, we may reasonably hope soon to get again into a condition of business activity, however considerable may be the foreign competition to which we may be exposed. Certain of these conditions have been attained. The sooner the rest are within our reach the better alike for labour and capital.

Nor should our faith in the principles which enable us so quickly to regain vigour, or our confidence in the early future be lessened by the existing unhappy state of things in Eastern Europe. For it is noteworthy that on many former occasions the anticipations of war have proved more disturbing to trade than its actual occurrence; and that shortly after the outbreak has really occurred business has revived rapidly. A great war always sets on foot a vast expenditure, and quickens the circulation of money and the exchange of commodities, not only in the centres where it is being waged, but also in others, which may be called upon to supply merchandise to the field of conflict. It often happens, too, that new channels of trade are opened out as the direct result of hostilities on a great scale. In the present instance the extent of the disturbance which may arise to trade if the war should become a great one will depend upon the number and importance of the powers who take part in it. Ironmasters will remember how great was the demand for their products during the Crimean war. It is within our experience that some iron-making firms in this country were not more busy, and were certainly less prosperous, during the three years of trading activity which followed upon the close of the Franco-German war. Then, we all know that a time of wars and rumours of wars is one almost to be desired in the steam coal trade. It would be quite what might fairly be looked for, judging by the past, if the steam coal trade should be good during the whole of this winter. The shipments from the Tyne Dock in the six days ending October 13 reached the surprising aggregate of 57,836 chaldrons, and the shipments last week from the same place were upon a similar scale. Such shipments from the Tyne are almost without parallel. Coal-

owners and ironmasters would do well to abide by the principles and the experiences of the past, and to allow no pessimist views to induce them to sigh for the onions and the garlic of Protection.

THICK COAL SEAMS.

It appears that in some parts of Europe there are seams of coal far thicker than those found in any part of Great Britain. The south-western part of Poland there is a bed 18 yards thick, which being worked from the outcrop in mines near the village of Dombrów, but giving only 50.38 of carbon. In Moravia, where some Adolph-Flötz 25 ft. in thickness, and is included in the upper part of the Bohemian collieries according to the report sent to the members of the Northern Bohemian Collieries Company. It is written by Mr. J. W. Lukis, managing director of Powell's Lantwit Collieries, and who before joining the Northern Bohemian Company visited the property, and the brown coal fields of Bohemia. At the Mariaschein, near Teplitz, he says the seam is from 30 to 40 ft. thick, the shaft being 186 yards deep. The Holtzeitz pits leased by the company from a Mr. Eaton the seam is known to be about 50 ft. in thickness. Mr. Lukis states that he was unable to descend it, but he visited Baron Erlanger's colliery working the same seam close by. The foreman told him that they had bored down below the 50 ft. of coal they were working, and with the exception of a small band of clay of a few inches the coal bed was found to be 105 ft. thick, so that the conclusion is that the same seam will be found at the pits of the company. If this is really the case then Bohemia, we should say, can boast of having the thickest seam of coal known, and as labour is cheap it ought to be worked at a remarkably good profit. Some of the workings it appears are open, and worked like large quarries. The coal is brought down by simply driving three or four adits into the coal at the bottom of the seam, which are united at the end by a cross-level; dynamite is then employed to remove the divisional pillars between the adits, when hundreds of tons of coal come down together. These seams have a covering of brick-clay varying from 1 yard to several yards deep, from which bricks are made. Assuming that all contained in the report is correct in every point, then it is evident that the coal field of Bohemia is a most valuable one indeed—far more so than people have generally given it credit for.

COAL MINING IN THE NORTH.

[FROM A CORRESPONDENT.]

The new winning at Whitburn so far has proved a failure, two shafts were sunk at a point near the sea—much too near the sea as it has proved to be as, after incurring great expense and erecting pumping power on a large scale than was ever before attempted upwards of 10,000 gallons of water per minute having been raised, it was found impossible to get more than about 30 fms. down from the surface; so, for the present, the works have been abandoned. When shafts are so far sunk in the limestone, and this limestone has been proved to be at this point about 70 fms. in thickness, and below the limestone, where the sand ought to be, there is little, if any, sand—it is, indeed, stated that which has been found at a short distance below the limestone.

This is the first attempt to sink through the limestone so near the sea on this coast. Monkwearmouth, Ryhope, and Silsworth are all at a considerable distance from the sea. Little water was met with at the two latter places, but a considerable quantity at Monkwearmouth—of course trifling as compared with the quantity met with at Whitburn. There is little doubt that the water from the sea passed into those shafts, as the limestone is of a very open porous nature, and large crannies or fissures also exist in it. When the engines were working, and the water was about "fording," the water was strongly impregnated with salt; further, the water rose higher in the shaft, and was more difficult to get down at the time of high-water on the sea. We have, therefore, sufficient grounds for the assertion that the sea was connected by means of open fissures with these ill-fated shafts. The open nature of the limestone on this coast is a remarkable feature, and it appears to be a local feature; at any rate, we have observed shafts sunk through limestone in the South of England where the strata were quite dry, and the limestone beds were so close that no water of consequence would pass. Some of your readers will be able to tell us what are the general characteristics of the limestone beds in other localities. It is to be hoped that this very expensive lesson at Whitburn will not be lost sight of; there is no doubt that shafts will be got down there if sunk at a safe distance from the sea. On the West Coast of England shafts have been sunk without difficulty much nearer the sea than the Whitburn shafts, but in those cases there was no limestone, but only a slight patch of close red sandstone, and below the shales of the coal measures, quite impervious to water.

SOUTH AMERICAN PROSPECTS.

The British public have sadly lost confidence of late in the stability and good faith of almost every one of the States of South America. This year has witnessed two events of considerable gravity—the defaults of the Republics of Peru and Uruguay, and even such Governments as those of Brazil and Chili have lost credit in consequence, the Five per Cent. of Brazil having receded to little over 90, while those of Chili have sunk to 80. Argentine credit has also been rudely shaken, the Six per Cent. Loan of the Argentine Republic of 1871 only commanding the very indifferent quotation of 42 or 44. As for the securities of such States as Bolivia, Costa Rica, Ecuador, Honduras, Mexico, Paraguay, and Venezuela, what shall we say of them? What but that they are a scandal and a blot on modern civilization in respect of their shameful treatment of their foreign creditors, the bulk of whom are unfortunately Englishmen. One other circumstance which tells against the communities of South America, in addition to what we are afraid must be termed their general discredit, is the apparent unsuitability of their climate for European immigrants. This would seem to be a very serious difficulty indeed, since the European immigrant is, after all, the main stay of such communities as New Zealand, Victoria, New South Wales, and the vast Republic of the United States. A third difficulty in connection with colonisation in South America is the unsettled and revolutionary character of the South American politics for a long series of years have been very great and rapid; and, as South American politicians have an awkward knack of settling their differences by a resort to a brisk fusillade, there has been in many parts of South America a life and insecurity of life and property; and we fear we must add, if we wish to be truthful, that this insecurity still exists. All these circumstances, taken together, sadly retard the progress of South American countries, and check the investment of foreign capital in them. The great difficulty of South America, however, the political difficulty. If the Governments of South America were only a little more stable, and a little more honest, all might yet be well with South American interests, but unfortunately the bulk of the public administrations of South America are reckless, dishonest, and corrupt.

In dealing with the drawbacks which retard the material advance of South America we omit to say anything of the general scantiness of the population. The obscure but none the less exhausting wars, which have been too often waged in South America, have told rather seriously upon the native races, and as there has been little or no immigration from Europe, the waste of life which has occurred has not been made good. The result is that most of the railways which have been thus far attempted in South America have been financial failures. We must except from this remark the San Paulo (Brazilian) Railway, that line having now not only swung clear of the guarantee of interest given by Brazil—albeit that that guarantee was at the somewhat severe rate of 7 per cent. per annum—but having also recouped some of the previous advances made to it by

It is cheering also to note that at some of the older mines in the centre of the ironstone district an increased output is being made. Thus, at South Skelton recently over 11,000 tons have been drawn in a single week from one shaft. As, during the latest year to which the "Mineral Statistics" are officially brought, the output of these mines was rather under 4000 tons weekly, the extent of the increase is apparent. It must not be supposed, however, that this increase betokens a general increase or an enlarged output. The contrary is the case at present, for in almost every instance any increase from one mine is merely a local accompaniment of a general decrease.

IMPROVED EXCAVATOR.—According to the invention of Mr. P. CRAMER, of the Minories, the crane consists of a pair of shears, constructed of timber, which with their lower ends rest upon a revolving platform, and are held by their upper ends by means of a strong chain attached suitably to a strong rigid frame built upon the land or truck. The shears hold up on their upper ends a revolving gear through an eye of which a strong square bar may pass up and down receiving at the same time revolving motion. The revolving gear is connected to the engine by means of a chain or wire-rope and suitable pulleys. The excavator proper consists chiefly in a strong bar made of square timber, and intended to pass through the eye

the revolving gear; a round bucket made of boiler iron and securely attached to the bar; and a system of plates hinged between bar and bucket, near the lower edge of the latter, and intended to work in two distinct manners,—at first, during excavating, they will hang in an angled position, and will act as cutters similar to the edges of a drill; and at second, after the bucket is filled, they will be raised, and will shut one against the other in a manner as to form a bottom to the bucket and keep in the spoil. Both bucket and bar on the one part and the plates on the other part are connected to the hoisting and lowering machinery by means of two sets of chains, and in a manner that both parts may be worked independently from each other, and to enable at the same time the rotary motion for the excavator the chains are attached to either part by means of intersected turn-tables.

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By order,
HARRY BUSWELL, Secretary.

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WANTED, A PERSON acquainted with the ERECTION of LEAD SMELTING WORKS, of the most approved construction, and COMPETENT to carry on the MANUFACTURE of LEAD.
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PARTNER WANTED (active or sleeping) for the separate extension of a well-known and long-established ENGINEERING BUSINESS in SCOTLAND, with connections in London. Capital required, £9000 to £10,000. Principals only treated with.
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Also, the whole of the VALUABLE ROD TIMBER, in pieces varying from 8 to 18 inches square, and from 40 to 96 feet in length; a large quantity of skip road and main engine timber, ladders, plank, and other timber, which will be found to be equal to new.
The attention of the public is specially called to this important sale of plant, which is the most extensive that has been offered in Cornwall for many years. The pump-work is comparatively new, and in prime condition; the rod timber was specially imported, and is not to be equalled in size, length, and quality.
The whole will be offered in lots to suit the convenience of purchasers. Catalogues, with full particulars, will appear in due course.

The mines are situated within three and a half miles of stations on the West Cornwall Railway, and four and a half miles from the port of Hayle, and easy rates of carriage may be obtained to either place.
An omnibus will leave the Camborne Railway for the mines on the day of sale on the arrival of the 10.5 A.M. down train, and will return in time to meet the last up train.

Any information may be obtained by applying to Captain PRYOR at the mines, Crenver and Wheel Abraham Mines, October 17th, 1876.

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The estate adjoins those of Sir Mylles Cave Brown Cave, Bart., Thomas Moore, Esq., and the Trustees of the late Marquis of Hastings.

The mines are, with others, leased to the Trustees of the late Marquis of Hastings, at the low royalty of one-tenth of the selling price, the lease expiring at Ladyday, 1884. Negotiations have been carried on with Mr. Hastings for a renewal of the term at the same royalty, but are now suspended.

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The Appleby Magna Company have taken on lease the mines under Mr. Moore's estate, and it is stated that they are about to commence operations.
For further particulars, and to inspect the plan and sections, apply at the offices of Messrs. WIGHT and SON, Solicitors, Dudley; or to JAMES WHITEHOUSE, Esq., Mining Engineer, Burnt Tree Villa, near Dudley.

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8, Austinfriars, London, 19th October, 1876.

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The Share Transfer Books will be closed from Wednesday, the 15th instant, until Friday, the 3rd proximo, both days inclusive.
By order of the Directors, C. GRAINGER, Secretary.
No. 1, King's Arms-yard, Moorgate-street, London, Oct. 24, 1876.

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In the parish of GWENNAP, CORNWALL.
Capital, £10,000; in 5000 (£2) shares.
5s. per share on application, and 2s. 6d. per share on allotment.

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The object of this company is to open up the celebrated Tresavean Mine lode, in a new property of which grants have been obtained at the low dues of 120th. It is in close proximity to mines that have been immensely productive and profitable, being on the line of continuation (eastward) of the celebrated Tresavean Mine, which no longer than 40 years back figured as one of the greatest dividend-paying mines in Cornwall. In the year 1833 the shareholders received in dividends £60,000 the shares (100th) after advanced from £10 to £200 each. The mine continued paying highly remunerative dividends for many years, amounting in the aggregate to half-a-million sterling.

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As justified by the important facts stated, more particularly the similarity of the main superstructural characteristic conditions of the lode in question to the lodes of some of the most abundantly productive mines of the district (in the same killas formation as this grant is in), it is to be confidently relied on that comparatively little depth of development is required to ensure the realisation of a copper mine of very great value in East Tresavean. This opinion is justified by analogy, to which practically scientific mining authorities will ever attach great importance, having proved it to be the safest guide in forming their opinions of the inherent value of mining properties.

It is intended to have a 40-in. diameter cylinder steam-engine for this mine to ensure its effectual development—say, in the first place, to a depth of 10 fms., at which several of the greatest mines of Gwennap commenced being ore producing, proving more and more productive in depth, and paying larger profits than any mines in the other districts of Cornwall. Indeed the Gwennap-copper mines have realised altogether such astounding profits as have gained for them a wide-world celebrity, it being well known that many of the leading Cornish families are indebted to them for their influential positions and wealth. The probabilities are in favour of East Tresavean proving such a rich mine as will revive the remembrance of the brilliant era of Gwennap copper mining of former days, there being many old mines in the parish that have profited hundreds of thousands of pounds.

It is only intended by the amount of capital nominated to fix the maximum liability of shareholders, not meaning it to be understood that anything like so much will be required to open out and establish East Tresavean as a permanently good dividend-paying mine, which it is confidently relied on will not necessitate a larger expenditure than £2000, if so much, paying for all engine-power, mechanical means and appliances, and indeed everything required, thus giving a rich prize for comparatively little money.

The shareholders will have the full benefit of the capital subscribed, there being no claim made for promotion money or free shares; the object is to offer and open out a good mine on the principle of equitably advantageous co-operation, the cost of leases, and out-of-pocket expenses consequent on the acquisition of the grant being, of course, charged to the company, one-half of the capital will be privately subscribed, leaving only 2500 shares to be issued, which will be allotted according to priority of application. Shares to be applied for by letter, remitting the first payment of 5s. per share, either to the manager or banker of the company. In the event of no allotment, amounts remitted will be returned in full.

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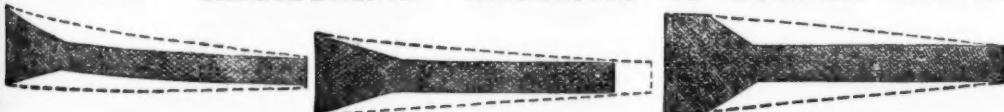
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THE MINING SHARE LIST.

BRITISH DIVIDEND MINES.

Shares.	Mines.	Paid.	Last wk. Cos. p.	Total divs. Per sh.	Last pd.
1500 Alderley Edge, c. Cheshire*	10 00	—	—	12 11 8	0 8 0 Nov. 1876
15000 Balmlyne, c. Wexford (4000 to Is.)	1 00	—	—	0 2 0	0 2 0 Nov. 1875
50000 Barmby, c. s. m. Devon*	1 00	—	—	0 2 0	0 2 0 Nov. 1875
2000 Barmby, c. s. m. Devon*	1 00	—	—	0 2 0	0 2 0 Nov. 1875
2000 Barmby, c. s. m. Devon*	1 00	—	—	0 2 0	0 2 0 Nov. 1875
4000 Brookwood, c. Buckfastleigh	1 00	—	—	0 2 0	0 2 0 Nov. 1875
3848 Cargill, s. d. Newlyn*	6 00	—	—	0 2 0	0 2 0 Nov. 1875
4000 Cashwell, c. Cumberland*	2 00	—	—	0 2 0	0 2 0 Nov. 1875
10000 Carn Brea, c. t. Illogan*	35 00	—	—	0 2 0	0 2 0 Nov. 1875
5000 Cath. & Jane, l. Penrynheadraeth	5 00	—	—	0 2 0	0 2 0 Nov. 1875
4250 Devon Gt. Consols, c. Tavistock*	23 4 9	—	—	0 2 0	0 2 0 Nov. 1875
10240 Dulcoath, c. W. Camborne	10 10 10	—	—	0 2 0	0 2 0 Nov. 1875
4500 Drake Water, c. Calstock	6 00	—	—	0 2 0	0 2 0 Nov. 1875
15000 Duches of Westminster, s. l. Holywell	1 00	—	—	0 2 0	0 2 0 Nov. 1875
10000 East Baleswiden, t. Sancerre*	1 00	—	—	0 2 0	0 2 0 Nov. 1875
6144 East Caradon, c. St. Clerf	2 14 6	—	—	0 2 0	0 2 0 Nov. 1875
3000 East Darren, l. Cardiganshire	32 00	—	—	0 2 0	0 2 0 Nov. 1875
4000 East Pool, t. c. Illogan	0 9 9	—	—	0 2 0	0 2 0 Nov. 1875
2000 East Wheel Lovell, t. Wendron*	6 15 0	—	—	0 2 0	0 2 0 Nov. 1875
40000 Glasgow Carr, c. (30,000 at p. 10,000 15a. p.)	25 0 0	—	—	0 2 0	0 2 0 Nov. 1875
15000 Great Dyllif, l. Montgomeryshire	4 00	—	—	0 2 0	0 2 0 Nov. 1875
15000 Great Dyllif, l. Montgomeryshire	4 00	—	—	0 2 0	0 2 0 Nov. 1875
615 Great Retallack, l. l. Penrynheadraeth	5 15 8	—	—	0 2 0	0 2 0 Nov. 1875
20000 Great West Van, l. Cardigan	2 00	—	—	0 2 0	0 2 0 Nov. 1875
50000 Green Hurth, l. Durham*	41 12 6	—	—	0 2 0	0 2 0 Nov. 1875
95000 Grognin, l. Cardigan*	0 6 0	—	—	0 2 0	0 2 0 Nov. 1875
1024 Herodol, l. near Liskeard	8 10 0	—	—	0 2 0	0 2 0 Nov. 1875
18000 Hington Down, c. Calstock* (21 sh.)	2 5 0	—	—	0 2 0	0 2 0 Nov. 1875
25000 Killalee, s. l. Tipperary	1 00	—	—	0 2 0	0 2 0 Nov. 1875
4000 Lisburne, l. Cardiganshire	15 10 0	—	—	0 2 0	0 2 0 Nov. 1875
14000 Llanidloes, s. l. Montgomery	3 00	—	—	0 2 0	0 2 0 Nov. 1875
8120 Lovell, t. Wendron	0 10 0	—	—	0 2 0	0 2 0 Nov. 1875
20000 Marke Valley, c. Linkinhorne	5 00	—	—	0 2 0	0 2 0 Nov. 1875
11000 Melindur Valley, l. Cardigan*	3 00	—	—	0 2 0	0 2 0 Nov. 1875
50000 Minera Mining Co., l. Wrexham*	6 00	—	—	0 2 0	0 2 0 Nov. 1875
20000 Mining Co. of Ireland, s. l. c. l.	7 00	—	—	0 2 0	0 2 0 Nov. 1875
512 North Busy, c. Chacewater	3 8 0	—	—	0 2 0	0 2 0 Nov. 1875
12000 North Henne, l. Wales	2 10 0	—	—	0 2 0	0 2 0 Nov. 1875
20000 North Levant, l. c. St. Just	12 0 0	—	—	0 2 0	0 2 0 Nov. 1875
27565 Old Treburt, s. l. ordinary shares	1 00	—	—	0 2 0	0 2 0 Nov. 1875
9258 Old Treburt, s. l. (10 per cent. pref.)	0 10 0	—	—	0 2 0	0 2 0 Nov. 1875
50000 Penhall, t. St. Agnes	3 00	—	—	0 2 0	0 2 0 Nov. 1875
45793 Penrith, t. c. Gwent	2 00	—	—	0 2 0	0 2 0 Nov. 1875
12000 Phoenix, t. W. Phoenix, s. l. Link.	3 4 9	—	—	0 2 0	0 2 0 Nov. 1875
15000 Prince Patrick, s. l. Holywell	1 00	—	—	0 2 0	0 2 0 Nov. 1875
1120 Providence, t. Lelant*	15 6 0	—	—	0 2 0	0 2 0 Nov. 1875
12000 Roman Gravel, l. l. Salop*	1 10 0	—	—	0 2 0	0 2 0 Nov. 1875
512 South Caradon, c. St. Clerf	1 00	—	—	0 2 0	0 2 0 Nov. 1875
6123 South Condurrow, t. c. Camborne	0 6 6	—	—	0 2 0	0 2 0 Nov. 1875
10000 So. Fr. Patrick, s. l. (5000 sh. issued)	1 00	—	—	0 2 0	0 2 0 Nov. 1875
12000 Tankerville, l. Salop*	6 00	—	—	0 2 0	0 2 0 Nov. 1875
20000 Tincroft, c. t. Pool, Illogan*	9 00	—	—	0 2 0	0 2 0 Nov. 1875
15000 Van, l. Llanidloes*	4 50	—	—	0 2 0	0 2 0 Nov. 1875
3000 W. Chiverton, l. Penrynheadraeth	12 10 0	—	—	0 2 0	0 2 0 Nov. 1875
1753 West Police, t. St. Agnes	10 00	—	—	0 2 0	0 2 0 Nov. 1875
512 West Tolgus, c. Redruth	95 10 0	—	—	0 2 0	0 2 0 Nov. 1875
2045 West Wheel Franks, t. Illogan	27 13 9	—	—	0 2 0	0 2 0 Nov. 1875
12000 West Wheel Franks, t. Illogan	27 13 9	—	—	0 2 0	0 2 0 Nov. 1875
612 Wheel Franks, t. Illogan	3 0 0	—	—	0 2 0	0 2 0 Nov. 1875
1024 Wheel Franks, t. Illogan	3 0 0	—	—	0 2 0	0 2 0 Nov. 1875
2045 Wheel Franks, t. Illogan	3 0 0	—	—	0 2 0	0 2 0 Nov. 1875
4250 Wheel Franks, t. Illogan	3 0 0	—	—	0 2 0	0 2 0 Nov. 1875
80 Wheel Franks, t. Illogan	3 0 0	—	—	0 2 0	0 2 0 Nov. 1875
5000 Wheel Franks, t. Illogan	3 0 0	—	—	0 2 0	0 2 0 Nov. 1875
50000 Wicklow, c. s. l. Wicklow	2 10 0	—	—	0 2 0	0 2 0 Nov. 1875
10000 Wye Valley, l. Montgomery*	8 00	—	—	0 2 0	0 2 0 Nov. 1875

FOREIGN DIVIDEND MINES.

Shares.	Mines.	Paid.	Last wk. Cos. p.	Total divs. Per sh.	Last pd.
55500 Alamillos, l. Spain*	2 00	—	—	1 16 3	0 1 6 Oct. 1875
30000 Almaden and Tinto Consol., s. l.	1 00	—	—	0 6 3	0 1 0 May 1876
30000 Australian, c. South Australia	7 7 6	—	—	0 18 0	0 2 6 Aug. 1876
10000 Battle Mountain, c. California*	5 00	—	—	0 10 0	0 10 0 Nov. 1875
15000 Birdseye Creek, c. California*	4 00	—	—	0 14 0	0 2 6 June 1876
12220 Burras, c. s. l. Australia	5 00	—	—	0 10 0	0 10 0 Oct. 1875
20000 Cape Copper Mining, s. l. Africa	5 00	—	—	0 15 0	0 1 0 Sept. 1875
40000 Cedar Creek, c. California*	5 00	—	—	0 6 0	0 2 6 June 1876
80000 Central American Association*	0 15 6	—	—	0 6 0	0 2 6 June 1876
15000 Chicago, s. l. Utah*	10 00	—	—	0 2 0	0 1 0 July 1876
21000 Colorado Terrible, s. l. Colorado*	8 00	—	—	0 13 0	0 4 0 Jan. 1876
10000 Copiapo, c. Chili* (40 shares)	16 15 0	—	—	0 7 5	0 2 6 Jan. 1876
100000 Don Pedro North del Rey*	0 18 0	—	—	0 2 0	0 2 0 Mar. 1876
35000 Eberhard and Aurora, s. Nevada*	10 00	—	—	0 1 0	0 5 0 July 1876
50000 Emma, c. l. Utah	30 00	—	—	0 12 0	0 8 0 Dec. 1875
70000 English and Australian, s. l. Aust.	2 00	—	—	0 12 0	0 2 0 Mar. 1876
10000 Ferguson, c. California*	2 00	—	—	0 12 0	0 2 0 Mar. 1876
80000 Flagstaff, s. l. Utah*	10 00	—	—	0 3 0	0 3 0 April 1876
20000 Fortuna, l. Spain*	2 00	—	—	0 2 0	0 5 0 July 1876
25000 Frontino, c. Bolivia, s. New Gran.*	2 00	—	—	0 1 0	0 1 0 Oct. 1875
80000 Gold Run, s. l. Idaho	1 00	—	—	0 2 0	0 4 0 Oct. 1875
50000 Kapunda Mining Co. Australia*	1 30	—	—	0 2 0	0 6 0 June 1876
20000 Last Chance, s. l. Utah	1 00	—	—	0 14 0	0 2 0 July 1876
15000 Linars, l. Spain*	3 00	—	—	0 16 0	0 9 0 Oct. 1875
50000 London and California, s. l. (25 shares)	3 00	—	—	0 10 0	0 1 0 July 1876
787 Lusitania, Portugal* (25 shares)	3 10 0	—	—	0 11 0	0 1 0 Mar. 1876
50000 Mammoth Copperworks of Utah, s. l.	10 00	—	—	0 5 0	0 5 0 Dec. 1875
50000 Mountain Chief, s. l. Utah*	10 00	—	—	0 10 0	0 4 0 Jan. 1876
18000 Prussian Mining & Ironworks, s. l.	30 00	—	—	0 10 0	0 1 0 July 1876
10000 Pontgibaud, s. l. France*	20 00	—	—	0 14 0	0 1 0 Jan. 1876
100000 Port Phillip, c. Clunes*	1 00	—	—	0 1 0	0 1 0 Jan. 1876
40000 Richmond Consols, s. Nevada*	5 00	—	—	0 3 0	0 1 0 Jan. 1876
40000 Santa Barbara, s. l. Utah	5 00	—	—	0 1 0	0 1 0 Jan. 1876
120000 Scottish Australian Mining Co.*	0 10 0	—	—	0 2 0	0 1 0 Jan. 1876
50000 Scottish Austral. Mining Co.*	1 00	—	—	0 2 0	0 1 0 Jan. 1876
112500 Sierra Butte, c. California*	2 00	—	—	0 1 0	0 1 0 Jan. 1876
60000 South Aurora, s. Nevada*	5 00	—	—	0 1 0	0 1 0 Jan. 1876
250000 St. John del Rey* (45 stock and multiple debt) l.	340 360	—	—	0 2 0	0 2 0 Nov. 1875
15000 Sweetland Creek, c. California*	4 00	—	—	0 2 0	0 2 0 Nov. 1875
20000 Tolima, c. s. l. America	5 00	—	—	0 1 0	0 3 0 July 1876
15000 Western Andes, s. l. New Granada	5 00	—	—	0 1 0	0 3 0 July 1876
21000 W. Prussian (250 pref. sh. paid)	10 00	—	—	0 16 0	0 8 0 Sept. 1876

NON-DIVIDEND FOREIGN MINES.

Shares.	Mines.	Paid.	Last wk. Cos. p.	Total divs. Per sh.	Last pd.
30000 Anglo-Australian, s. l. Victoria*	2 00	—	—	0 2 0	—
50000 Anguilla Phosphate, West Indies (4000 issued)	10 00	—	—	0 2 0	—
10000 Argentine, c. Argentina Republic	5 00	—	—	0 2 0	—
10000 Australian Central, s. l. (also 5000 deferred shares)	1 00	—	—	0 2 0	—
30000 Bellavista, s. l. Peru* (40 shares)	10 00	—	—	0 2 0	—
30000 Blue Tent, s. l. California	10 00	—	—	0 2 0	—
50000 Braganza, s. l. Brazil*	0 15 0	—	—	0 2 0	—
10000 Camp Floyd, s. l. Utah*	10 00	—	—	0 2 0	—
50000 Cesena Sulphur Company, Romagna, Italy*	10 00	—	—	0 2 0	—
5182 Chontales, s. l. Nicaragua*	2 00	—	—	0 2 0	—
50000 Clifton, c. Colorado*	5 00	—	—	0 2 0	—
15000 Couderc & Co., s. l. France*	5 00	—	—	0 2 0	—
50000 Excelsior Hydraulic Gold Washing Co., California*	5 00	—	—	0 2 0	—
100000 Exchequer, s. l. California*	1 00	—	—	0 2 0	—
40000 Holcombe Valley, s. l. California*	1 00	—	—	0 2 0	—
50000 Hornachos, s. l. (40 shares) Brazil*	10 00	—	—	0 2 0	—
50000 Imperial Brazilian Collieries, Brazil*	10 00	—	—	0 2 0	—
10000 J. L. X. L., s. l. California*	1 00	—	—	0 2 0	—
50000 Javali, s. l. Nicaragua*	2 00	—	—	0 2 0	—
50000 La Mancha, l. Newfoundland*	10 00	—	—	0 2 0	—
12000 Laneros, s. l. l. Viscaya, Spain (25 shares)	1 15 0	—	—	0 2 0	—
50000 Malabar, s. l. Colombia* (4715 issued)	1 00	—	—	0 2 0	—
40000 Malpas, c. Colombia* (7400 pref. shares, fully paid)	1 00	—	—	0 2 0	—
12000 Menzenberg, c. Honnef, Germany*	5 00	—	—	0 2 0	—
50000 Monte Loretto, c. l. Italy*	5 00	—	—	0 2 0	—
50000 New Quebrada, c. Venezuela*	5 00	—	—	0 2 0	—
50000 New Rosario, s. l. Mexico*	5 00	—	—	0 2 0	—
50000 New Zealand Kapanga, s. l. Coromandel*	1 00	—	—	0 2 0	—
50000 Oregon, c. Oregon, U.S. (preference shares)	5 00	—	—	0 2 0	—
50000 Panulic, c. Chili* (45000 debentures)	4 00	—	—	0 2 0	—
50000 Pastaza, s. l. Ecuador*	4 00	—	—	0 2 0	—
50000 Rica, c. Colombia, s. l. Italy*	3 00	—	—	0 2 0	—
2,212,000 Rio Tinto, c. l. (4000 issued)	1 00	—	—	0 2 0	—
100000 Roca Grande, c. Brazil* (25 shares)	0 19 0	—	—	0 2 0	—
200000 Russia Copper, Orenburg and Ufa*	10 00	—	—	0 2 0	—
20000 San Pedro, c. Chili*	10 00	—	—	0 2 0	—
10000 Silver Plume, s. l. Colorado*	2 00	—	—	0 2 0	—
50000 Snowdrift, c. Colorado*	2 00	—	—	0 2 0	—
50000 Teconia, c. l. Utah*	2 00	—	—	0 2 0	—
20000 Thornhill Reef, s. l. Australia*	10 00	—	—	0 2 0	—
42174 United Mexican, s. l. Mexico*	1 00	—	—	0 2 0	—
14000 Utah, s. l. Utah*	25 15 3	—	—	0 2 0	—
25000 Victoria (London)*, s. l. Australia (25,000 sh. 16s. pd.)	5 00	—	—	0 2 0	—
75000 Yorke Peninsula, c. South Australia	1 00	—	—	0 2 0	—
40000 Yorke Peninsula, c. South Australia	1 00	—	—	0 2 0	—

FOREIGN AND MISCELLANEOUS STOCKS, BONDS, LOANS, AND TRUSTS.

Closing Prices.		Closing Prices.	
Argentina, 1868, 6 per cent.....	54 55	Foreign and Col. Gov. Trust, 6 p. cent.	75 80
Bolivia, 6 per cent.....	16 18	Do., 5 per cent, 2d issue.....	45 55
Brazilian, 1868, 6 per cent.....	91 93	Do., 5 per cent, 3d issue.....	45 50
Chilian, 1868, 7 per cent.....	99 103	Do., 1872, 4th issue.....	45 50
City of Providence, 6 p.c. coupon bonds	95 97	Do., 1873, 5th issue.....	45 53
Egyptian, 1862, 7 per cent.....	41 43	Peruvian, 1870, 6 per cent.....	17 38
Do., 1868, 7 per cent.....	42 44	Do., 1872, 6 per cent.....	14 1/2 14 3/4
Do., 7 per cent. V.M.L.....	43 45	Russian, 5 1/2 per cent. L. Mort.....	73 74
Do., 9 per cent. guar.....	45 46	Spanish, Quicksilver Mort., 5 p. cent.,	90 92
Do., 7 per cent., K.M.L.....	38 40		